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PROGRAM/PROJECT MANAGEMENT INITIATIVE

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April 1991

PROGRAM/PROJECT MANAGEMENT

A quarterly NASA/RECON bibliography with indexes

A selection of annotated references to unclassified reports, journal articles, and conference proceeding papers introduced into the NASA scientific and technical information system and announced in:

Scientific and Technical Aerospace Reports (STAR)
International Aerospace Abstracts (IAA)

Prepared by the staff of the NASA Headquarters Scientific and Technical Library with support from the NASA Scientific and Technical Facility and Francis T. Hoban, Code ND, NASA Headquarters.

INTRODUCTION

This bibliography is the fourth of a quarterly publication listing 100 reports, articles and other documents announced in Scientific and Technical Aerospace Reports (STAR) and International Aerospace Abstracts (IAA).

In its subject coverage, the Program/Project Management bibliography includes many issues managers face today. Some of the subject areas are listed below:

Contract Management	Management Information Systems	Personnel Management
Cost Analysis	Management Methods	Project Management
Cost Effectiveness	Management Planning	Reliability Analysis
Cost Reduction	Management Systems	Reliability Engineering
Engineering Management	Manpower	Research Management
Government Procurement	Matrix Management	Scheduling
Life Cycle Costs	Mission Planning	System Effectiveness
Logistics Management	Operating Costs	Systems Engineering
Maintainability	Operations Research	Systems Management

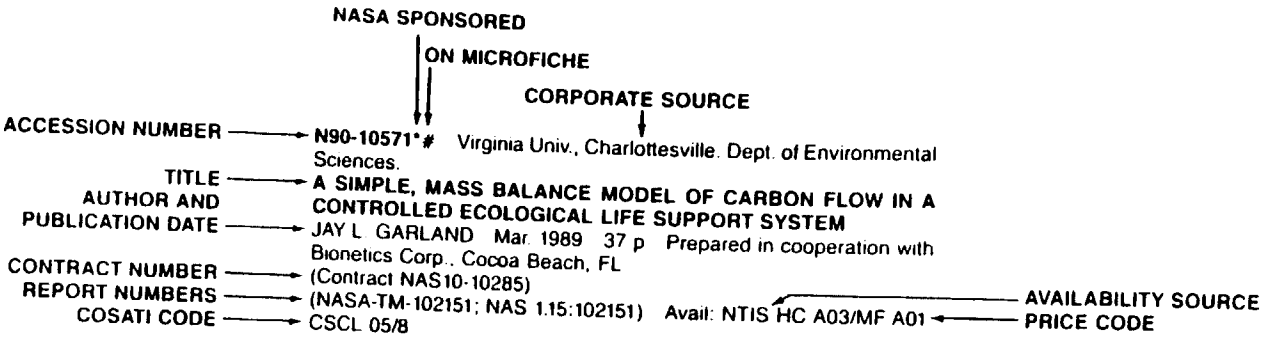
While the emphasis is NASA management, documents from other federal agencies are represented. Each entry consists of a bibliographic citation and an abstract in most cases. The entries are listed by accession number in descending order. Subject, author, corporate source, report number, accession number and contract number indexes are provided at the end of the bibliography to assist the researcher in identifying pertinent citations.

AVAILABILITY OF CITED PUBLICATIONS

NASA employees may contact their center library to order "N" documents through RECON or copy short documents from microfiche. Center libraries also hold "A" microfiche for reproducing non-copyrighted IAA documents. Finally, it may be necessary to borrow documents from another libraries through interlibrary loan.

NASA contractors should contact their NASA Center Library to determine the lending policies of that Center Library. "N" documents are available from the National Technical Information Services (NTIS), 5285 Port Royal Road, Springfield, VA 22161. Phone 703-487-4650 Fax 703-321-8547. "A" documents are available from the American Institute of Aeronautics and Astronautics (AIAA), 555 West 57th Street, New York, N. Y. 10019. Phone 212-247-6500.

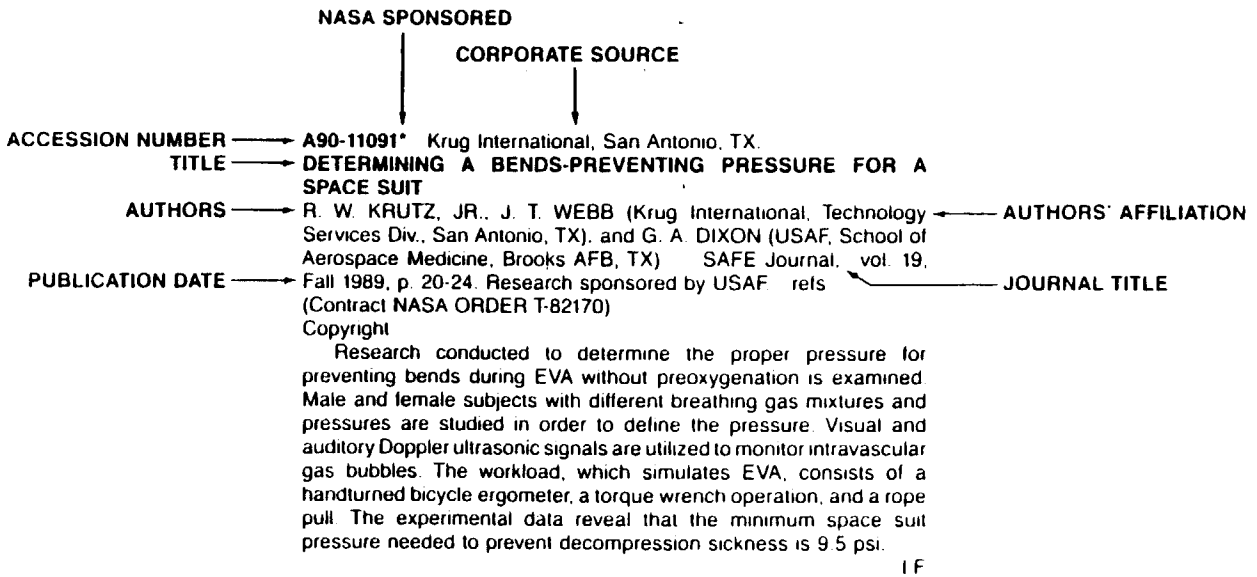
TYPICAL REPORT CITATION AND ABSTRACT


NASA SPONSORED
ON MICROFICHE
CORPORATE SOURCE
ACCESSION NUMBER
N90-10571*# Virginia Univ., Charlottesville. Dept. of Environmental Sciences.
TITLE
A SIMPLE, MASS BALANCE MODEL OF CARBON FLOW IN A CONTROLLED ECOLOGICAL LIFE SUPPORT SYSTEM
AUTHOR AND PUBLICATION DATE
JAY L. GARLAND Mar. 1989 37 p Prepared in cooperation with Bionetics Corp., Cocoa Beach, FL
CONTRACT NUMBER
(Contract NAS10-10285)
REPORT NUMBERS
(NASA-TM-102151; NAS 1.15:102151)
COSATI CODE
CSCL 05/8
Avail: NTIS HC A03/MF A01
AVAILABILITY SOURCE
PRICE CODE

Internal cycling of chemical elements is a fundamental aspect of a Controlled Ecological Life Support System (CELSS). Mathematical models are useful tools for evaluating fluxes and reservoirs of elements associated with potential CELSS configurations. A simple mass balance model of carbon flow in CELSS was developed based on data from the CELSS Breadboard project at Kennedy Space Center. All carbon reservoirs and fluxes were calculated based on steady state conditions and modelled using linear, donor-controlled transfer coefficients. The linear expression of photosynthetic flux was replaced with Michaelis-Menten kinetics based on dynamical analysis of the model which found that the latter produced more adequate model output. Sensitivity analysis of the model indicated that accurate determination of the maximum rate of gross primary production is critical to the development of an accurate model of carbon flow. Atmospheric carbon dioxide was particularly sensitive to changes in photosynthetic rate. The small reservoir of CO_2 relative to large CO_2 fluxes increases the potential for volatility in CO_2 concentration. Feedback control mechanisms regulating CO_2 concentration will probably be necessary in a CELSS to reduce this system instability.

Author

TYPICAL JOURNAL ARTICLE CITATION AND ABSTRACT


NASA SPONSORED
CORPORATE SOURCE
ACCESSION NUMBER
TITLE
AUTHORS
PUBLICATION DATE
AUTHORS' AFFILIATION
JOURNAL TITLE
A90-11091* Krug International, San Antonio, TX.
DETERMINING A BENDS-PREVENTING PRESSURE FOR A SPACE SUIT
R. W. KRUTZ, JR., J. T. WEBB (Krug International, Technology Services Div., San Antonio, TX), and G. A. DIXON (USAF, School of Aerospace Medicine, Brooks AFB, TX) SAFE Journal, vol. 19,
Fall 1989, p. 20-24. Research sponsored by USAF refs
(Contract NASA ORDER T-82170)
Copyright
Research conducted to determine the proper pressure for preventing bends during EVA without preoxygenation is examined. Male and female subjects with different breathing gas mixtures and pressures are studied in order to define the pressure. Visual and auditory Doppler ultrasonic signals are utilized to monitor intravascular gas bubbles. The workload, which simulates EVA, consists of a handturned bicycle ergometer, a torque wrench operation, and a rope pull. The experimental data reveal that the minimum space suit pressure needed to prevent decompression sickness is 9.5 psi.
I F

OTHER RESOURCES

This bibliography is not intended to be the final or conclusive source of Program and Project Management documentation. Many excellent sources are commercially available. Some possibilities are listed below.

Indexes

- ABI/Inform
- Air University Library Index to Military Periodicals
- Business Periodical Index
- Economic Literature Index
- Harvard Business Review
- Magazine Index
- Management Contents
- National Newspaper Index
- Newsearch
- Personnel Literature

Associations

- American Institute of Management (AIM)
- American Management Association (AMA)
- Institute of Management Sciences (TIMS)
- Internation Project Management Association (INTERNET)
- Project Management Institute (PMI)
- Society for Advancement of Management (SAM)

67A27559 ISSUE 13 PAGE 2233 CATEGORY 34 RPT#: AAS PAPER 66-158 67/00/00 9 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Gemini program management.
UNOC: Management aspects of design and development of Gemini spacecraft noting program organization, management techniques and personnel motivation
AUTH: A/OLDEG, H. W. PAN: (AA/MCDONNELL AIRCRAFT CO., DEPT. 19, ST. LOUIS, MO./.)
CIO: UNKNOWN /AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE ON THE MANAGEMENT OF AEROSPACE PROGRAMS, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PAPER AAS 66-158./ IN- THE MANAGEMENT OF AEROSPACE PROGRAMS, AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PROCEEDINGS. <A67-27545 13-34< EDITED BY W. L. JOHNSON. TARZANA, CALIF., AMERICAN ASTRONAUTICAL SOCIETY /AAS SCIENCE AND TECHNOLOGY SERIES. VOLUME 12/, 1967, P. 323- 331. <FOR ABSTRACT SEE ISSUE 08, PAGE 1430, ACCESSION NO. A67-20975<
MAJS: /*GEMINI PROJECT/*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT
MINS: / BUDGET/ CONFERENCE/ CONTROL/ MANAGEMENT/ MATRIX/ PERSONNEL/ PLANNING/ PROGRAM/ PROJECT/ ROOM/ SPACECRAFT

67A27558* ISSUE 13 PAGE 2233 CATEGORY 34 RPT#: AAS PAPER 66-157 67/00/00 21 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Gemini incentive program model.
UNOC: Planned interdependency incentive method /PIIM/ FOR Gemini program at lowest cost and best performance
AUTH: A/SCHNEIDER, W. C. PAN: (AA/NASA, WASHINGTON, D.C./.)
CIO: UNITED STATES /AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE ON THE MANAGEMENT OF AEROSPACE PROGRAMS, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PAPER AAS 66-157./ IN- THE MANAGEMENT OF AEROSPACE PROGRAMS, AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PROCEEDINGS. <A67-27545 13-34< EDITED BY W. L. JOHNSON. TARZANA, CALIF., AMERICAN ASTRONAUTICAL SOCIETY /AAS SCIENCE AND TECHNOLOGY SERIES. VOLUME 12/, 1967, P. 301- 321. <FOR ABSTRACT SEE ISSUE 08, PAGE 1430, ACCESSION NO. A67-20974<
MAJS: /*COST ESTIMATE/*GEMINI PROJECT/*MANAGEMENT PLANNING/* PROGRAM MANAGEMENT
MINS: / CONFERENCE/ COST/ ESTIMATE/ MANAGEMENT/ MODEL/ PERFORMANCE/ PLANNING/ PROGRAM/ SURFACE

67A27555* ISSUE 13 PAGE 2233 CATEGORY 34 RPT#: AAS PAPER 66-156 67/00/00 32 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Program trend line analysis, an aid to general management.
UNOC: NASA management and program trend line analysis
AUTH: A/JENKINS, T. E. PAN: (AA/NASA, PROGRAM AND SPECIAL REPORTS DIV., WASHINGTON, D.C./.)
CIO: UNITED STATES /AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE ON THE MANAGEMENT OF AEROSPACE PROGRAMS, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PAPER AAS 66-156./ IN- THE MANAGEMENT OF AEROSPACE PROGRAMS, AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PROCEEDINGS. <A67-27545 13-34< EDITED BY W. L. JOHNSON. TARZANA, CALIF., AMERICAN ASTRONAUTICAL SOCIETY /AAS SCIENCE AND TECHNOLOGY SERIES. VOLUME 12/, 1967, P. 229- 260. <FOR ABSTRACT SEE ISSUE 08, PAGE 1430, ACCESSION NO. A67-20973<
MAJS: /*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT
MINS: / ANALYSIS/ CONFERENCE/ DEVELOPMENT/ LINE/ MANAGEMENT/ PLANNING/ PROGRAM/ PROJECT/ RESEARCH/ SPACE/ TREND

67A27553 ISSUE 13 PAGE 2233 CATEGORY 34 67/00/00 22 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Management scheme for Apollo.
UNOC: Management scheme for Apollo program
AUTH: A/PHILLIPS, S. C.
CIO: UNKNOWN IN- THE MANAGEMENT OF AEROSPACE PROGRAMS, AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PROCEEDINGS. <A67-27545 13-34< EDITED BY W. L. JOHNSON. TARZANA, CALIF., AMERICAN ASTRONAUTICAL SOCIETY /AAS SCIENCE AND TECHNOLOGY SERIES. VOLUME 12/, 1967, P. 193- 214.
MAJS: /*APOLLO PROJECT/*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT
MINS: / BASIS/ CONFERENCE/ CONTROL/ COST/ DATA/ MANAGEMENT/ MISSION/ OPERATION/ PLANNING/ PROGRAM/ PROJECT/ SOURCE/ STRUCTURE/ SYSTEM/ TECHNIQUE/ TEST/ TRAINING

67A27551* ISSUE 13 PAGE 2232 CATEGORY 34 RPT#: AAS PAPER 66-150 CNT#: NSG-342 67/00/00 14 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Program budgeting and the space program.
UNOC: Planning-Programming-Budgeting System /PPBS/ IMPLEMENTATION by Federal agencies and relation to space activities
AUTH: A/WEIDENBAUM, M. L. PAN: (AA/WASHINGTON U., DEPT. OF ECONOMICS, ST. LOUIS, MO., NASA, WASHINGTON, D.C./.)
CIO: UNITED STATES /AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE ON THE MANAGEMENT OF AEROSPACE PROGRAMS, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PAPER AAS 66-150./ IN- THE MANAGEMENT OF AEROSPACE PROGRAMS, AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PROCEEDINGS. <A67-27545 13-34< EDITED BY W. L. JOHNSON. TARZANA, CALIF., AMERICAN ASTRONAUTICAL SOCIETY /AAS SCIENCE AND TECHNOLOGY SERIES. VOLUME 12/, 1967, P. 157- 170. 5 REFS. <FOR ABSTRACT SEE ISSUE 08, PAGE 1430, ACCESSION NO. A67-20970<
MAJS: /*BUDGET/*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT/*SPACE PROGRAM
MINS: / CONFERENCE/ COST/ GOVERNMENT/ IMPACT/ MANAGEMENT/ NASA PROGRAM/ PLANNING/ PROGRAM/ PROGRAMMING/ SPACE

67A20975# ISSUE 8 PAGE 1430 CATEGORY 34 RPT#: AAS PAPER 66-158 66/11/00 10 PAGES UNCLASSIFIED DOCUMENT

UTTL: Gemini program management.
UNOC: Management aspects of design and development of Gemini spacecraft noting program organization, management techniques and personnel motivation
AUTH: A/OLDEG, H. W. PAN: (AA/MCDONNELL AIRCRAFT CORP., DEPT. 19, ST. LOUIS, MO./.)
CIO: UNKNOWN AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE ON THE MANAGEMENT OF AEROSPACE PROGRAMS, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PAPER AAS 66-158. 10 P.
MAJS: /*GEMINI PROJECT/*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT
MINS: / BUDGET/ CONFERENCE/ CONTROL/ MANAGEMENT/ MATRIX/ PERSONNEL/ PLANNING/ PROGRAM/ PROJECT/ ROOM/ SPACECRAFT

67A20971# ISSUE 8 PAGE 1430 CATEGORY 34 RPT#: AAS PAPER 66-153 66/11/00 14 PAGES UNCLASSIFIED DOCUMENT

UTTL: F-111 - Fixed price contract management.
UNOC: F-111 fixed price contract management, discussing weapon system management, acquisition, controls and techniques to circumvent inherent problems
AUTH: A/KEELING, G. F. PAN: (AA/USAF, SYSTEMS COMMAND, ANDREWS AFB, MD./.)
CIO: UNITED STATES AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE ON THE MANAGEMENT OF AEROSPACE PROGRAMS, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PAPER AAS 66-153. 14 P.
MAJS: /*F-111 AIRCRAFT/*PERT PROJECT/*PROGRAM MANAGEMENT/*QUALITY CONTROL/*WEAPON SYSTEM MANAGEMENT
MINS: / CONFERENCE/ CONTROL/ MANAGEMENT/ POLARIS MISSILE/ PROGRAM/ QUALITY/ SYSTEM/ WEAPON

67A20968# ISSUE 8 PAGE 1429 CATEGORY 34 RPT#: AAS PAPER 66-148 66/11/00 17 PAGES UNCLASSIFIED DOCUMENT

UTTL: Cost analysis for large scale development/ production programs.
UNOC: Cost analysis for large scale development/ production programs
AUTH: A/KLICK, A. F. PAN: (AA/NUS CORP., CONSULTEC DIV., WASHINGTON, D.C./.)
CIO: UNKNOWN AMERICAN ASTRONAUTICAL SOCIETY, NATIONAL CONFERENCE ON THE MANAGEMENT OF AEROSPACE PROGRAMS, U. OF MISSOURI, COLUMBIA, MO., NOV. 16-18, 1966, PAPER AAS 66-148. 17 P.
MAJS: /*COST ESTIMATE/*PRODUCT DEVELOPMENT/*PROGRAM MANAGEMENT
MINS: / BREAKDOWN/ CONFERENCE/ COST/ DEVELOPMENT/ ESTIMATE/ MANAGEMENT/ PRODUCTION/ PROGRAM/ SCHEDULE/ WORK

65A24155# ISSUE 13 PAGE 1968 CATEGORY 34 64/00/00 16 PAGES UNCLASSIFIED DOCUMENT

UTTL: Scope - management visibility and control system.
UNOC: Schedule, cost and performance /SCOPE/ computer aided management system for budget and schedule control of complex programs R and D
AUTH: A/ASHCRAFT, W. D.; B/HOCHWALD, W.; C/MILLER, B. U. PAN: (AC/NORTH AMERICAN AVIATION, INC., AUTONETICS DIV., ANAHEIM, CALIF./.)
CIO: UNKNOWN IN- NATIONAL AEROSPACE ELECTRONICS CONFERENCE, DAYTON, OHIO, MAY 11-13, 1964, PROCEEDINGS. <A65-24101 13-09< CONFERENCE SPONSORED BY THE PROFESSIONAL GROUP ON AEROSPACE AND NAVIGATIONAL ELECTRONICS, DAYTON SECTION OF THE INST. OF ELECTRICAL AND ELECTRONICS ENGINEERS, AND AMERICAN INST. OF AERONAUTICS AND ASTRONAUTICS. DAYTON, INST. OF ELECTRICAL AND ELECTRONICS ENGINEERS, DAYTON SECTION, 1964, P. 463-478.
MAJS: /*COMPUTER METHOD/*COST ESTIMATE/*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT
MINS: / COMPUTER/ CONFERENCE/ COST/ ESTIMATE/ MANAGEMENT/ METHOD / PERFORMANCE/ PLANNING/ PROGRAM

65A23612# ISSUE 13 PAGE 1967 CATEGORY 34 65/00/00 18 PAGES UNCLASSIFIED DOCUMENT

UTTL: Planning and measuring technical progress.
UNOC: Matrix type approach for planning and measuring technical progress, examining equipment maturity and test risks
AUTH: A/MEYER, J. B. PAN: (AA/GENERAL ELECTRIC CO., DAYTONA BEACH, FLA./.)
CIO: UNKNOWN IN- NEW DIMENSIONS IN SPACE TECHNOLOGY, SPACE CONGRESS, 2ND, COCOA BEACH, FLA., APR. 5-7, 1965, PROCEEDINGS. <A65-23599 13-31< CONGRESS SPONSORED BY THE CANAVERAL COUNCIL OF TECHNICAL SOCIETIES. COCOA BEACH, CANAVERAL COUNCIL OF TECHNICAL SOCIETIES, 1965, P. 170-187.
MAJS: /*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT/*TEST PROGRAM
MINS: / CALCULATION/ CONFERENCE/ COST/ EQUIPMENT/ FLIGHT/ GROUND / MANAGEMENT/ MATRIX/ PLANNING/ PROGRAM/ TEST/ VALUE

65A22129*# ISSUE 12 PAGE 1693 CATEGORY 11 RPT#: AIAA PAPER 65-268 65/04/00 20 PAGES UNCLASSIFIED DOCUMENT

UTTL: The saturn launch vehicle logistics support system.
UNOC: Manned space flight program with emphasis on Saturn launch vehicle support system
AUTH: A/GOODRUM, J. C.; B/SMOLENSKY, S. M. PAN: (AA/NASA, MARSHALL SPACE FLIGHT CENTER, HUNTSVILLE, ALA./ AB/NASA, OFFICE OF MANNED SPACE FLIGHT, WASHINGTON, D.C./.)
SAP: MEMBERS, $0.50, NONMEMBERS, $1.00.
CIO: UNITED STATES AMERICAN INST. OF AERONAUTICS AND ASTRONAUTICS, AIR FORCE LOGISTICS COMMAND, AND AERONAUTICAL SYSTEMS DIV., SUPPORT FOR MANNED FLIGHT CONFERENCE, DAYTON, OHIO, APR. 21-23, 1965, PAPER 65-268. 20 P.
MAJS: /*LOGISTICS/*PRELAUNCH PROBLEM/*PROGRAM MANAGEMENT/*SATURN

LAUNCH VEHICLE/*SUPPORT SYSTEM
MINS: / CONFERENCE/ FLIGHT/ LAUNCH/ LAUNCHING/ MANAGEMENT/ MANNED/ PRELAUNCH/ PROBLEM/ PROGRAM/ SPACE/ SUPPORT/ SYSTEM/ VEHICLE

65A19526# ISSUE 9 PAGE 1345 CATEGORY 31 65/00/00 9 PAGES UNCLASSIFIED DOCUMENT
UTTL: Development and management of a low cost satellite.
UNOC: OV2-1 program results used as aid in development and management of low cost satellite
AUTH: A/ARMSTRONG, W. C.; B/MUINCH, G. PAN: (AA/NORTHROP CORP., NORTHROP SPACE LABS., HAWTHORNE, CALIF./.)
CIO: UNKNOWN IN- AIAA UNMANNED SPACECRAFT MEETING, LOS ANGELES, CALIF., MAR. 1-4, 1965 /AIAA PUBLICATION CP-12/. <A65-19498 09-31< NEW YORK, AMERICAN INST. OF AERONAUTICS AND ASTRONAUTICS, 1965, P. 297-305.
MAJS: /*COST ESTIMATE/*PROGRAM MANAGEMENT/*SATELLITE DESIGN/* TITAN LAUNCH VEHICLE
MINS: / BOOSTER/ CONFERENCE/ DESIGN/ DEVELOPMENT/ ESTIMATE/ LOW COST/ MANAGEMENT/ PAYLOAD/ PROGRAM/ RESEARCH/ SATELLITE/ SECONDARY/ VEHICLE

64A23348 ISSUE 19 CATEGORY 1 64/03/00 14 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Program control systems.
UNOC: Program control oriented to systems management
AUTH: A/MCNEIL, J. F. PAN: (AA/GATES RADIO CO., QUINCY, ILL./.)
CIO: UNKNOWN IEEE TRANSACTIONS ON ENGINEERING MANAGEMENT, VOL. EM-11, MAR. 1964, P. 29-42. 14 REFS.
MAJS: /*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT/*SYSTEMS ENGINEERING
MINS: / ACTIVITY/ CONTROL/ COST/ CURVE/ EXPENDITURE/ MANAGEMENT/ NETWORK/ PLANNING/ PROGRAM/ PROJECT/ RATE/ REPORT/ SCHEDULE/ TOTAL

64A21607 ISSUE 17 CATEGORY 17 64/00/00 17 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Program control systems.
UNOC: Program control techniques to assist management planning, scheduling, performance analysis and cost control
AUTH: A/MCNEIL, J. PAN: (AA/COLLINS RADIO CO., CEDAR RAPIDS, IOWA/.)
CIO: UNKNOWN IN- NATIONAL WINTER CONVENTION ON MILITARY ELECTRONICS, 5TH, LOS ANGELES, CALIF., FEB. 5- 7, 1964, PROCEEDINGS. VOLUME 3. .CONVENTION SPONSORED BY THE PROFESSIONAL TECHNICAL GROUP ON MILITARY ELECTRONICS, INST. OF ELECTRICAL AND ELECTRONICS ENGINEERS. NORTH HOLLYWOOD, WESTERN PERIODICALS CO., 1964, P. 12-26 TO 12-42. 14 REFS.
MAJS: /*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT
MINS: / CONTROL/ COST/ EVALUATION/ PERFORMANCE/ PERT PROJECT/ PROJECT/ SCHEDULING/ SYSTEM

67N81477* RPT#: NASA-CR-82419 REPT.-222-66 CNT#: NSG-235 66/10/00 15 PAGES UNCLASSIFIED DOCUMENT
UTTL: Project management and the role of the project manager
AUTH: A/RUBIN, I. M.
CORP: Massachusetts Inst. of Tech., Cambridge. OCT. 1966 15 P REFS
MINS: / BEHAVIOR/ DECISION/ EXPERIENCE/ HUMAN/ MANAGEMENT/ PERSONNEL/ PROJECT

67N39646# ISSUE 24 PAGE 4457 CATEGORY 15 RPT#: AD-648315 66/08/00 63 PAGES UNCLASSIFIED DOCUMENT
UTTL: Proceedings Defense Conference on Quality and Reliability Management, volume I
UNOC: Conference proceedings on quality and reliability management
CORP: DJ727565 AVAIL.NTIS
CIO: UNITED STATES AUG. 1966 63 P CONF. HELD IN ANNAPOLIS, MD., 2-4 AUG. 1966
MAJS: /*CONFERENCE/*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT/* QUALITY CONTROL/*RELIABILITY
MINS: / CONTROL/ HANDLING/ MAINTENANCE/ MANAGEMENT/ MANPOWER/ NASA PROGRAM/ PERSONNEL/ PLANNING/ PROGRAM/ QUALITY/ STORAGE

67N34661# ISSUE 20 PAGE 3750 CATEGORY 34 67/06/09 15 PAGES UNCLASSIFIED DOCUMENT
UTTL: On the management of space projects
UNOC: Organization and methodology of managing space projects
AUTH: A/DE FRIES, P. J.
CORP: T6795061
CIO: UNITED STATES <1967< 15 P PRESENTED AT THE SYMP. ON ADVANCED SYSTEMS TECHS. OF THE DEUT. GES. FUER RAKETENTECHNIK UND RAUMFAHRT, MUNICH, 9 JUN. 1967
MAJS: /*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT/*SPACE PROGRAM
MINS: / CONFERENCE/ CONTROL/ MANAGEMENT/ METHODOLOGY/ ORGANIZATION/ PHASE/ PLANNING/ PROGRAM/ PROJECT/ SPACE

67N21969*# ISSUE 11 PAGE 1851 CATEGORY 11 67/01/16 4 PAGES UNCLASSIFIED DOCUMENT
UTTL: Scoping support to program requirements
UNOC: Scoping of logistics support to program requirements - participation of logistician during conceptual, design, development, production, and deployment phases
AUTH: A/PHILLIPS, S. L.
CORP: ND380289
CIO: UNITED STATES IN NASA, MARSHALL SPACE FLIGHT CENTER 1ST ANN. LOGISTICS MANAGEMENT SYMP. 16 JAN. 1967 P 36-39 /SEE N67-21962 11-11/ CFSTI- HC $3.00/MF $0.65
MAJS: /*APOLLO PROJECT/*LOGISTICS/*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT/*SUPPORT SYSTEM/*SYSTEMS ENGINEERING

MINS: / ANALYSIS/ AUGMENTATION/ CONCEPT/ CONFERENCE/ DEPLOYMENT/ DESIGN/ DEVELOPMENT/ ENGINEERING/ EQUIPMENT/ FUNCTIONAL/ HARDWARE/ INTEGRATION/ LANDING/ LUNAR/ MANAGEMENT/ MANNED/ MINUTEMAN ICBM/ PERSONNEL/ PLANNING/ PROCUREMENT/ PRODUCTION/ PROGRAM/ SCOPE/ SPACE/ SUPPORT/ SYSTEM/ TRADEOFF

67N18105*# ISSUE 7 PAGE 1214 CATEGORY 34 RPT#: NASA-CR-81761 REPT.-232-66 CNT#: NSG-235 66/12/00 26 PAGES UNCLASSIFIED DOCUMENT

UTTL: Analysis of problems encountered in R and D project management

UNOC: Types and frequencies of problems encountered by project and laboratory managers working on 32 government-supported projects in aerospace and electronics industries

AUTH: A/POUST, R.; B/RUBIN, I.

CORP: Massachusetts Inst. of Tech., Cambridge. CSS: (ALFRED P. SLOAN SCHOOL OF MANAGEMENT.) AVAIL.NTIS

CIO: UNITED STATES DEC. 1966 26 P REFS

MAJS: /*CONTRACTOR/*INDUSTRY/*PROGRAM MANAGEMENT

MINS: / AEROSPACE/ DEVELOPMENT/ ELECTRONICS/ FREQUENCY/ GOVERNMENT/ LABORATORY/ MANAGEMENT/ PROBLEM/ PROGRAM/ PROJECT/ RANK/ RESEARCH

66N38746*# ISSUE 23 PAGE 4639 CATEGORY 34 RPT#: NASA-TM-X-53516 66/09/14 40 PAGES UNCLASSIFIED DOCUMENT

UTTL: A management plan for systems assurance during phases A, B, C, and D

UNOC: Management plan for systems assurance in NASA PROGRAM

AUTH: A/FARISH, P. T.

CORP: National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL. AVAIL.NTIS

CIO: UNITED STATES 14 SEP. 1966 40 P

MAJS: /*MANAGEMENT PLANNING/*NASA PROGRAM

MINS: / ASSURANCE/ ENGINEERING/ FUNCTION/ HUMAN/ MAINTAINABILITY / ORGANIZATION/ QUALITY/ RELATION/ RELIABILITY/ SAFETY/ SYSTEM/ WORKING

66N29351*# ISSUE 16 PAGE 3211 CATEGORY 31 RPT#: NASA-TM-X-56766 65/00/00 20 PAGES UNCLASSIFIED DOCUMENT

UTTL: Approach in achieving high reliability of the Saturn class vehicles

UNOC: Reliability engineering for Saturn launch vehicles

AUTH: A/REES, E.

CORP: National Aeronautics and Space Administration. Marshall Space Flight Center, Huntsville, AL. AVAIL.NTIS

CIO: UNITED STATES <1965< 20 P PRESENTED AT THE 4TH ANN. RELIABILITY AND MAINTAINABILITY CONF., LOS ANGELES, 28-30 JUL. 1965

MAJS: /*PROGRAM MANAGEMENT/*RELIABILITY/*SATURN LAUNCH VEHICLE

MINS: / CONTROL/ ENGINEERING/ HARDWARE/ LANDING/ LIQUID/ LUNAR/ MANAGEMENT/ OPTIMIZATION/ OXYGEN/ PROGRAM/ PROPELLANT/ QUALITY/ SCHEDULE

66N19206# ISSUE 9 PAGE 1458 CATEGORY 15 RPT#: NAVWEPS-00-65-502 64/06/01 379 PAGES UNCLASSIFIED DOCUMENT

UTTL: Handbook - Reliability engineering

UNOC: Reliability engineering handbook for program management and management planning applications

CORP: B7822513

SAP: GPO- $2.75

CIO: UNITED STATES 1 JUN. 1964 379 P REFS

MAJS: /*HANDBOOK/*MANAGEMENT PLANNING/*PROGRAM MANAGEMENT/* RELIABILITY

MINS: / DESIGN/ ENGINEERING/ MAINTAINABILITY/ MANAGEMENT/ MILITARY/ PLANNING/ PROGRAM/ PROJECT/ SYSTEM/ WEAPON

62N14924*# ISSUE 13 CATEGORY 30 RPT#: NASA-TN-D-1504 62/08/00 146 PAGES UNCLASSIFIED DOCUMENT

UNOC: Manned rotating spacecraft

AUTH: A/ADAMS, J. J.; B/ALGRANTI, J. S.; C/BERGLUND, R. A.; D/BOOTH, F. W.; E/BRISSENDEN, R. F.; F/BROOKS, G. W.; G/CLARK, L. G.; H/DAVIDSON, J. R.; I/DAWSON, J. R.; J/GOODMAN, G. P.; K/HATCH, H. G., JR.; L/HEATH, A. R., JR.; M/HILL, P. R.; N/HODGE, W. F.; O/KURZHALS, P. R.; P/LETKO, W.; Q/MALLICK, D. L.; R/OSBORNE, R. S.; S/POPMA, D. C.; T/RUNNELS, R. W.; U/RUNYAN, H. L.; V/SCHNITZER, E.; W/STONE, R. W., JR.; X/WILSON, C. H.; Y/ZENDER, G. W.

CORP: National Aeronautics and Space Administration. Langley Research Center, Hampton, VA.

CIO: UNITED STATES NATIONAL AERONAUTICS AND SPACE ADMINISTRATION. LANGLEY RESEARCH CENTER, LANGLEY STATION, VA. A REPORT ON THE RESEARCH AND TECHNOLOGICAL PROBLEMS OF MANNED ROTATING SPACECRAFT. P. R. HILL ET AL. WASHINGTON, NASA, AUG. 1962. 146 P. 19 REFS. THIS REPT. IS A SUMMARY OF PAPERS PRESENTED TO INTERESTED NASA PERSONNEL AT LANGLEY RESEARCH CENTER SYMPOSIUM, JULY 31-AUG. 1, 1962. /NASA TN D-1504/ OTS- $2.75.

MAJS: /*LIFE SUPPORT SYSTEM/*MANNED SPACECRAFT/*REVOLUTION/* ROTATION/*SPACE STATION/*SPACECRAFT

MINS: / LIFE/ MANNED/ SOURCE/ SPACE/ SPACE FLIGHT/ STATION/ SUPPORT/ SYSTEM

91A21237 ISSUE 7 PAGE 1129 CATEGORY 83 RPT#: SAE PAPER 901020 90/04/00 18 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT

UTTL: Making spacecraft affordable - An assessment of alternatives

AUTH: A/CALLAHAM, MICHAEL B. PAA: A/(U.S. Congress, Office of Technology Assessment, Washington, DC)

CIO: UNITED STATES

SAE, Aerospace Atlantic Meeting, Dayton, OH, Apr. 23-26, 1990. 18 p.

MAJS: /*COST ANALYSIS/*COST REDUCTION/*PAYLOAD MASS RATIO/*SPACECRAFT CONFIGURATIONS/*SPACECRAFT PERFORMANCE

MINS: / DESIGN TO COST/ PAYLOAD CONTROL/ SPACECRAFT MODULES

ABA: Author

ABS: This paper evaluates four proposals for reducing the costs of spacecraft and other payloads. It concludes that: (1) using a standard bus, if available, could save up to two-thirds the cost of using a customized bus. (2) Payloads could cost less if allowed to be heavier. A Titan-class payload might cost about $130 million less if allowed to be five times as heavy. (3) Anticipating greater-than-expected payload weight growth during development reduces risks of delay and expense for redesign. The optimal weight marging to allow at the beginning of full-scale development is about 11 to 12 percent for a Titan-class payload. (4) A swarm of small satellites might be as effective for some missions as a single large satellite, and possibly more economical, because smaller satellites typically cost much less per kilogram than do large ones.

91A19399# ISSUE 6 PAGE 935 CATEGORY 83 RPT#: AIAA PAPER 91-0656 91/01/00 10 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT

UTTL: Improving facility effectiveness to reduce testing cost

AUTH: A/GULATI, RAMESH C. PAA: A/(Sverdrup Technology, Inc.; USAF, Arnold Engineering Development Center, Arnold AFB, TN)

CIO: UNITED STATES

AIAA, Aerospace Sciences Meeting, 29th, Reno, NV, Jan. 7-10, 1991. 10 p.

MAJS: /*COST REDUCTION/*PROJECT MANAGEMENT/*TEST EQUIPMENT

MINS: / FAILURE ANALYSIS/ INDUSTRIAL ENERGY/ MAINTENANCE/ OPTIMIZATION/ STANDARDS

ABA: V.T.

ABS: The operational objectives of an engine test facility, including the improvement of equipment and facility availability, the optimization of tasks and activities, and the reduction of energy costs are identified. Ways of improving the equipment and facility availability through failure prevention and equipment history analysis are discussed, and focus is placed on preventive, predictive, and reliability-centered maintenance. Statistical process control principles applied to maintenance in order to control cost or failures are outlined. Maintenance-optimization models, culture-dependent technique and tools, and works standards including planning and scheduling are considered. A measurement system evaluating the effectiveness of the proposed tools and methods is specified.

91A13076 ISSUE 3 PAGE 435 CATEGORY 81 90/06/00 33 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT

UTTL: Autonomy, interdependence, and social control - NASA and the Space Shuttle Challenger

AUTH: A/VAUGHAN, DIANE PAA: A/(Boston College, MA)

CIO: UNITED STATES

Administrative Science Quarterly (ISSN 0001-8392), vol. 35, June 1990, p. 225-257. Research supported by the University of Oxford and American Bar Foundation.

MAJS: /*NASA SPACE PROGRAMS/*QUALITY CONTROL/*SAFETY MANAGEMENT /*SOCIAL FACTORS/*SPACE SHUTTLE MISSIONS

MINS: / ACCIDENT PREVENTION/ CHALLENGER (ORBITER)/ GOVERNMENT/INDUSTRY RELATIONS/ MISSION PLANNING/ Q FACTORS / RISK

ABA: Author

ABS: This paper shows that the organizations responsible for regulating safety at the National Aeronautics and Space Administration (NASA) failed to identify flaws in management procedures and technical design that, if corrected, might have prevented the Challenger tragedy. Analysis of the processes of discovery, monitoring, investigation, and sanctioning in the Space Shuttle Program indicates that regulatory effectiveness was inhibited by the autonomy and interdependence of NASA and its regulators. This discovery suggests that autonomy and interdependence, concepts developed from research on the external control of organizations, are applicable to the study of intraorganizational regulatory relationships. Moreover, by articulating the organizational contribution to technical failure, this research challenges existing assumptions about the social control of risky technologies.

91A10908*# ISSUE 1 PAGE 89 CATEGORY 81 90/00/00 13 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT

UTTL: Space Station Freedom - Configuration management approach to supporting concurrent engineering and total quality management --- for NASA Space Station Freedom Program

AUTH: A/GAVERT, RAYMOND B. PAA: A/(NASA, Space Station Freedom Program Office, Reston, VA)

CORP: NASA Space Station Program Office, Reston, VA.

CIO: UNITED STATES

IN: Space Logistics Symposium, 3rd, Colorado Springs, CO, Apr. 30-May 2, 1990, Proceedings (A91-10901 01-12). Huntsville, AL, Society of Logistics Engineers, 1990, 13 p.

MAJS: /*CONFIGURATION MANAGEMENT/*ENGINEERING MANAGEMENT/*NASA SPACE PROGRAMS/*SOFTWARE TOOLS/*SPACE STATIONS

MINS: / CANADIAN SPACE PROGRAM/ CONCURRENT PROCESSING/ EUROPEAN SPACE AGENCY/ JAPANESE SPACE PROGRAM/ LIFE CYCLE COSTS/ SPACECRAFT POWER SUPPLIES
ABA: R.E.P.
ABS: Some experiences of NASA configuration management in providing concurrent engineering support to the Space Station Freedom program for the achievement of life cycle benefits and total quality are discussed. Three change decision experiences involving tracing requirements and automated information systems of the electrical power system are described. The potential benefits of concurrent engineering and total quality management include improved operational effectiveness, reduced logistics and support requirements, prevention of schedule slippages, and life cycle cost savings. It is shown how configuration management can influence the benefits attained through disciplined approaches and innovations that compel consideration of all the technical elements of engineering and quality factors that apply to the program development, transition to operations and in operations. Configuration management experiences involving the Space Station program's tiered management structure, the work package contractors, international partners, and the participating NASA centers are discussed.

90A52870 ISSUE 24 PAGE 3907 CATEGORY 66 89/00/00
4 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Adaptations to the systems engineering management process for projects with incomplete requirements
AUTH: A/WILLOUGHBY, JOHN K. PAA: A/(Information Sciences, Inc., Denver, CO)
CIO: UNITED STATES
IN: IEEE International Conference on Systems Engineering, Dayton, OH, Aug. 24-26, 1989, Proceedings (A90-52860 24-66). New York, Institute of Electrical and Electronics Engineers, Inc., 1989, p. 197-200.
MAJS: /*SYSTEMS ENGINEERING/*SYSTEMS MANAGEMENT
MINS: / COMMAND AND CONTROL/ DECISION MAKING
ABA: I.E.
ABS: Ten adaptations to the traditional practice of systems engineering management are presented. Although they may require innovation, such adaptations are not without precedent since similar innovations have been implemented to assure that safety is achieved in manned space systems. The role of requirements in traditional systems engineering management projects is discussed. Systems that resist requirements definition and adaptations to management practices that reduce dependence on requirements are also discussed.

90A52144# ISSUE 24 PAGE 3838 CATEGORY 14 90/08/00
5 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: The Ulysses storage and recertification activities - The managerial problems
AUTH: A/EATON, D. PAA: A/(ESTEC, Noordwijk, Netherlands)
CIO: INTERNATIONAL ORGANIZATION
ESA Bulletin (ISSN 0376-4265), no. 63, Aug. 1990, p. 73-77.
MAJS: /*MISSION PLANNING/*PROJECT MANAGEMENT/*ULYSSES MISSION
MINS: / AGING (MATERIALS)/ CERTIFICATION/ INFORMATION MANAGEMENT / LOGISTICS MANAGEMENT/ PRELAUNCH TESTS
ABA: L.K.S.
ABS: The building and integration of the Ulysses spacecraft was completed against the original schedule (allowing for some leeway), yet repeated delays forced it to be stored for almost one year until shortly before launch. The majority of the subsystems were stored by placing the entire spacecraft into its sealed transport container, filled with dry nitrogen, and kept in a clean room. The ageing of components and their recertification are discussed, noting that the total duration of each recertification was approximately nine months. The question of continuity of trained and experienced personnel is also addressed, noting that it was possible to recreate a combined ESA/Industry team that had the same skill and dedication to the success of Ulysses as the original team.

90A52136*# ISSUE 24 PAGE 3832 CATEGORY 12 90/08/00
5 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Ulysses - An ESA/NASA cooperative programme
AUTH: A/MEEKS, W.; B/EATON, D. PAA: A/(JPL, Pasadena, CA); B/(ESTEC, Noordwijk, Netherlands)
CORP: Jet Propulsion Lab., California Inst. of Tech., Pasadena.; European Space Agency. European Space Research and Technology Center, ESTEC, Noordwijk (Netherlands).
CIO: UNITED STATES
ESA Bulletin (ISSN 0376-4265), no. 63, Aug. 1990, p. 13-17.
MAJS: /*EUROPEAN SPACE PROGRAMS/*INTERNATIONAL COOPERATION/* MISSION PLANNING/*NASA SPACE PROGRAMS/*ULYSSES MISSION
MINS: / INTERNATIONAL RELATIONS/ PROJECT MANAGEMENT
ABA: L.K.S.
ABS: Cooperation between ESA and NASA is discussed, noting that the Memorandum of Understanding lays the framework for this relationship, defining the responsibilities of ESA and NASA and providing for appointment of leadership and managers for the project. Members of NASA's Jet Propulsion Laboratory and ESA's ESTEC staff have been appointed to leadership positions within the project and ultimate control of the project rests with the Joint Working Group consisting of two project managers and two project scientists, equally representing both organizations. Coordination of time scales and overall mission design is discussed, including launch cooperation, public relations, and funding of scientific investigations such as Ulysses. Practical difficulties of managing an international project are discussed such as differing documentation requirements and communication techniques, and assurance of equality on projects.

90A51143 ISSUE 23 PAGE 3796 CATEGORY 81 90/08/00
7 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Outline of a quality plan for industrial research and development projects
AUTH: A/RAJASEKERA, JAY R. PAA: A/(AT&T Bell Laboratories, Princeton, NJ)
CIO: UNITED STATES
IEEE Transactions on Engineering Management (ISSN 0018-9391), vol. 37, Aug. 1990, p. 191-197.
MAJS: /*INDUSTRIAL MANAGEMENT/*RESEARCH AND DEVELOPMENT
MINS: / MATRICES (MATHEMATICS)/ PROJECT MANAGEMENT
ABA: I.E.
ABS: Quality issues associated with projects in an industrial research laboratory are analyzed. By recognizing the common characteristics of projects in an industrial research laboratory, the problem of identifying the quality priorities is broken down into a series of levels. For each project at the top level are the personnel who play important roles for the success or failure of the project. At the second level are the stages through which the project progresses during its successful completion. At the third level are the factors contributing to the successful completion of the stages above. At the fourth level are the subfactors or the quality metrics that identify the level of success of the factors above. Through the application of this analytic hierarchy process (AHP), a planning and decision-making tool, the quality plan is constructed, and activities of industrial research projects are brought under a common umbrella to identify the most important quality aspects of customers. The scoring mechanism developed here is useful for quality monitoring purposes.

90A50629# ISSUE 23 PAGE 3671 CATEGORY 18 89/00/00
17 PAGES UNCLASSIFIED DOCUMENT
UTTL: Small spacecraft for low-cost planetary missions
AUTH: A/COLE, K. J.; B/FEINGOLD, H.; C/MCADAMS, J.; D/STANCATI, M. L.; E/FRENCH, J. R. PAA: D/(Science Applications International Corp., San Diego, CA); E/(JRF Engineering Services, La Canada, CA)
CIO: UNITED STATES
IN: Annual AIAA/Utah State University Conference on Small Satellites, 3rd, Logan, UT, Sept. 26-28, 1989, Proceedings (A90-50601 23-18). Logan, UT, Utah State University, 1989, 17 p.
MAJS: /*INTERPLANETARY SPACECRAFT/*LAUNCH VEHICLES/*MISSION PLANNING/*SPACE MISSIONS
MINS: / ASTEROID MISSIONS/ COST ANALYSIS/ LAUNCH WINDOWS/ VENUS ATMOSPHERE/ VENUS PROBES
ABA: C.D.
ABS: Planetary science missions that can be accomplished within the bounds of small spacecraft programs are discussed. Options for spacecraft and launch vehicles are considered. The types of missions addressed include lunar missions, Venus atmospheric probes, near-earth asteroid rendezvous, comet coma sample returns, and new comet flythroughs. Cost and programmatic issues are discussed. It is concluded that valuable scientific goals can be attained within the bounds of small missions programs, and that these missions can be done more frequently, thus increasing the overall science return.

90A42817# ISSUE 19 PAGE 3107 CATEGORY 81 RPT#: AIAA PAPER 90-2703 90/07/00 12 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: ALS - A unique system approach
AUTH: A/SASSO, STEVEN E.; B/ISAKOWITZ, STEVEN J. PAA: B/(Martin Marietta Astronautics Group, Denver, CO)
CIO: UNITED STATES
AIAA, SAE, ASME, and ASEE, Joint Propulsion Conference, 26th, Orlando, FL, July 16-18, 1990. 12 p.
MAJS: /*ADVANCED LAUNCH SYSTEM (STS)/*AEROSPACE ENGINEERING/*LAUNCH VEHICLE CONFIGURATIONS/*SYSTEMS ENGINEERING
MINS: / DESIGN TO COST/ ENGINEERING MANAGEMENT/ INFORMATION FLOW / OPERATIONAL PROBLEMS/ QUALITY CONTROL
ABA: R.E.P.
ABS: The principal features of the Advanced Launch System (ALS) that set it apart from past development work are presented, and some of the present achievements are discussed. The ALS is a flexible space launch system that is to provide the timely delivery of a wide range of payloads into orbit at a lowered cost. Design of a modular family of vehicles is based on the usage of advanced technology and concurrent engineering as well as operational efficiency. Analytical tools and principles of Total Quality Management, used in a disciplined systems-engineering process, were employed to develop the design approach.

89A51328*# ISSUE 22 PAGE 3584 CATEGORY 81 RPT#: AIAA PAPER 89-5003 89/07/00 9 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: National Aero-Space Plane technology development overview
AUTH: A/WRIGHT, HOWARD T. PAA: A/(NASA, Washington, DC; USAF, National Aerospace Plane Joint Program Office, Wright-Patterson AFB, OH)
CORP: National Aeronautics and Space Administration, Washington, DC.; Air Force Systems Command, Wright-Patterson AFB, OH.
CIO: UNITED STATES
AIAA, National Aerospace Plane Conference, 1st, Dayton, OH, July 20, 21, 1989. 9 p.
MAJS: /*AEROSPACE PLANES/*AIR BREATHING ENGINES/*HYPERSONIC VEHICLES/*SPECIFIC IMPULSE/*SUPERSONIC COMBUSTION RAMJET ENGINES
MINS: / LAUNCH VEHICLES/ MANAGEMENT SYSTEMS
ABA: Author
ABS: The paper discusses the management structure and

organization that was developed in early 1986 to focus the national technology resource pool on the enabling technologies for the NASP. The NASP program is developing technologies in parallel with total system studies that are aimed at single stage to orbit (SSTO) capability. In order to manage the technology development seven teams were established by discipline and charged with the task of recommending specific programs to be funded by the NASP Joint Program Office (JPO). The teams were staffed by representatives from NASA Research Centers, Johns Hopkins University, and the Air Force Laboratories at Wright-Patterson AFB. In addition several special teams were established to recommend development programs for specific areas of technical concern that became apparent when the total system studies identified the technology to be critical and sensitive in the analysis that would enable a single stage to orbit vehicle.

89A49415# ISSUE 21 PAGE 3418 CATEGORY 84 RPT#: AIAA PAPER 89-2035 89/07/00 13 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT

UTTL: International cooperation on EFA --- European Fighter Aircraft

AUTH: A/OBERMEIER, ERWIN PAA: A/(Messerschmitt-Boelkow-Blohm GmbH, Munich, Federal Republic of Germany)

CIO: GERMANY,FEDERAL REPUBLIC OF

AIAA, AHS, and ASEE, Aircraft Design, Systems and Operations Conference, Seattle, WA, July 31-Aug. 2, 1989. 13 p.

MAJS: /*AEROSPACE INDUSTRY/*AIRCRAFT DESIGN/*FIGHTER AIRCRAFT/*INTERNATIONAL COOPERATION

MINS: / AEROSPACE TECHNOLOGY TRANSFER/ AIRCRAFT EQUIPMENT/ COST ANALYSIS/ EUROPE/ PROJECT MANAGEMENT

ABA: C.E.

ABS: Experience gained during the four-nation European Fighter Aircraft (EFA) program is examined. High-technology large-scale projects will be performed in the framework of international cooperation. A systematic program management is mandatory for complex projects using advanced technology under the constraint of limited budgets. Customer and contractor organizations will be equally responsible for the coordination of the program, while specialized tasks will be carried out at partner companies. Cost estimates require international harmonization with consideration of possible modifications, fixed-price contract requirements, and risk. An examination of issues of industrial policy and relevance to alliances showed that the views are harmonized between the four to six European partners.

89A33775* ISSUE 13 PAGE 2063 CATEGORY 83 89/00/00 54 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT

UTTL: Launch vouchers for space science research --- Book

AUTH: A/MACAULEY, MOLLY K. PAA: A/(Resources for the Future, Inc., Washington, DC)

CORP: Resources for the Future, Inc., Washington, DC.

CIO: UNITED STATES

Research supported by NASA. Washington, DC, Resources for the Future, Inc., 1989, 54 p.

MAJS: /*ECONOMIC ANALYSIS/*NASA SPACE PROGRAMS/*RESEARCH AND DEVELOPMENT/*SPACE TRANSPORTATION/*SPACEBORNE EXPERIMENTS

MINS: / GOVERNMENT/INDUSTRY RELATIONS/ LAUNCH VEHICLES/ PAYLOADS / SPACE COMMERCIALIZATION/ SPACECRAFT LAUNCHING

ABA: B.J.

ABS: Recent national space policy proposes the use of space transportation vouchers to increase opportunities for space-based science research and to support the U.S. space transportation industry. Vouchers issued and financially backed by the government would be given to researchers for redemption on any mode of space transportation. This paper examines the economic costs and benefits of vouchers; incentive-based strategies for effective program design; and areas where the voucher scheme is weak. It is concluded that, under plausible assumptions, vouchers may well be a cost-effective way to achieve near-term space transportation for space research payloads.

87A24674 ISSUE 9 PAGE 1203 CATEGORY 14 86/11/00 6 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT

UTTL: Automated configuration management on a DOD satellite ground system

AUTH: A/CHRISTIAN, KATHLEEN B.; B/ZUCKER, SANDRA H. PAA: B/(General Electric Co., Space Systems Div., Philadelphia, PA)

CIO: UNITED STATES

IEEE Aerospace and Electronic Systems Magazine (ISSN 0885-8985), vol. 1, Nov. 1986, p. 10-15.

MAJS: /*CONFIGURATION MANAGEMENT/*GROUND SUPPORT SYSTEMS/*MILITARY SPACECRAFT/*SATELLITE GROUND SUPPORT/*SPACECRAFT CONFIGURATIONS

MINS: / AUTOMATIC CONTROL/ PROJECT MANAGEMENT/ SPACECRAFT CONTROL/ TRACKING (POSITION)

ABA: Author

ABS: An automated Configuration Management System (CMS) was developed at General Electric and is in use on a DOD Satellite Ground System maintenance contract. CMS improves and enhances the manual techniques for project tracking and change control and allows for reliable management of large projects. Because CMS works with any file, it can perform Configuration Management on all items in a configuration. The CMS Bookkeeping and Status Accounting forms are displayed on a terminal, and the user is guided into filling them out correctly. New configuration items or changes can be entered into the system only after approval has been supplied by the proper authority. Since a common project data base is built by CMS, visibility of current system status is available to those who are permitted project access. Standard report forms as well as user defined report forms are used when viewing the

current or historic system information. CMS not only controls the configuration, but also the paperwork, change approval cycle, and the quality of the product.

84A45688* ISSUE 22 PAGE 3202 CATEGORY 15 84/07/26
13 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Space stations and their potential uses
AUTH: A/FREITAG, R. F. PAA: A/(NASA, Space Station Task Force, Washington, DC)
CORP: National Aeronautics and Space Administration, Washington, DC.
CIO: UNITED STATES
(Royal Society, Discussion on Technology in the 1990s: The Industrialization of Space, London, England, Dec. 7, 8, 1983) Royal Society (London), Philosophical Transactions, Series A (ISSN 0080-4614), vol. 312, no. 1519, July 26, 1984, p. 119-131.
MAJS: /*MANNED ORBITAL LABORATORIES/*NASA PROGRAMS/*SPACE STATIONS/*SPACECRAFT DESIGN
MINS: / COMMERCIAL SPACECRAFT/ EUROPEAN SPACE PROGRAMS/ INTERNATIONAL COOPERATION/ MISSION PLANNING/ SPACE COMMERCIALIZATION/ SPACE TRANSPORTATION SYSTEM
ABA: Author
ABS: This paper discusses the status of NASA's efforts to define the scope of a space station program. It presents NASA's rationale for a space station, architectural, technological and operational concepts that would enhance its capabilities, status of planning, how it would be used, opportunities for commercialization, and the potential for international participation in the program.

83A31050# ISSUE 13 PAGE 1808 CATEGORY 12 83/02/00
8 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Space stations of the imagination
AUTH: A/DAVID, L. W. PAA: A/(National Space Institute, Washington, DC)
CIO: UNITED STATES
AIAA Student Journal (ISSN 0001-1460), vol. 20, Winter 1982-1983, p. 6-13.
MAJS: /*AEROSPACE SCIENCES/*RESEARCH AND DEVELOPMENT/*SPACE STATIONS
MINS: / HISTORIES/ SALYUT SPACE STATION/ SKYLAB PROGRAM
ABA: O.C.
ABS: An historical account is presented of the variety of forms envisioned for orbiting space stations by both popular and scientific writers, beginning with the speculations of K.E. Tsiolkovsky (1911) and Hermann Oberth (1923), and reaching more familiar configurations with the annular and polygonal stations proposed by Wernher von Braun in 1951-1952. Attention is also given to the experimental efforts toward the establishment of permanent space stations represented by Skylab, which destructively reentered the earth atmosphere in 1979, and the Salyut-class Soviet spacecraft, which have undertaken long-duration orbital laboratory tasks during which cosmonauts have lived for as long as 185 days in orbit (Salyut 6). The coupling of Salyut-class spacecraft to form larger space stations is one of the development alternatives speculated as likely for the Soviet space program.

83A20648*# ISSUE 7 PAGE 1001 CATEGORY 80 83/02/00
9 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: The Space Shuttle focused-technology program - Lessons learned
AUTH: A/FITZGERALD, P. E., JR.; B/GABRIS, E. A. PAA: A/(Martin Marietta Aerospace, Michoud Div., Denver, CO); B/(NASA, Office of Aeronautics and Space Technology, Washington, DC)
CORP: Martin Marietta Aerospace, Denver, CO.; National Aeronautics and Space Administration, Washington, DC.
CIO: UNITED STATES
Astronautics and Aeronautics, vol. 21, Feb. 1983, p. 60-67, 72.
MAJS: /*NASA PROGRAMS/*SPACE SHUTTLES/*TECHNOLOGY ASSESSMENT
MINS: / ASTRIONICS/ COST REDUCTION/ FEDERAL BUDGETS/ SPACECRAFT DESIGN
ABA: D.H.K.
ABS: The results of a focused technology program (FTP), its management structure, the development of the Space Shuttle, and lessons applicable to future space programs such as a space station are discussed. A committee was formed by NASA in 1969 to define the technologies necessary for a reusable spacecraft. Basic and applied research assessments were featured at the beginning of the process. Working groups were established to cover all necessary areas, e.g., Operations, Structures and Materials, Aerothermodynamics, etc., and tasks were distributed to appropriate NASA centers. Funding was drawn from existing budgets. The FTP proceeded successfully because of an understanding of the respective roles of industry and government, the willingness of industry to invest early in a new technology, and the unclassified status of information generated by the program. The in-house design and technology transfer methods that brought the project to a technology demonstration phase are explored, noting the necessity for users to take part in the development within their field.

82A35231 ISSUE 17 PAGE 2816 CATEGORY 89 82/07/00
12 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: The Space Telescope
AUTH: A/BAHCALL, J. N.; B/SPITZER, L., JR. PAA: A/(Institute for Advanced Study, Princeton, NJ)
CIO: UNITED STATES
Scientific American, vol. 247, July 1982, p. 40-51.
MAJS: /*ELECTROMAGNETIC RADIATION/*HUBBLE SPACE TELESCOPE/*SPACE SHUTTLES/*SPACEBORNE ASTRONOMY/*SYSTEMS ENGINEERING

MINS: / ATMOSPHERIC ATTENUATION/ EARTH ORBITS/ HIGH RESOLUTION/ HISTORIES/ STRUCTURAL DESIGN/ TOPOGRAPHY
ABA: O.C.
ABS: After defining the problems posed for optical telescopy by atmospheric absorption in the infrared and ultraviolet regions, and a brief history of attempts to date to circumvent these problems by the deployment of small telescopes aboard rockets, balloons and satellites, a description is given of the design features and operational capabilities of the NASA Space Telescope. This telescope, which is scheduled to be put in earth orbit by the Space Shuttle in 1985, will have a 2.4 m-diameter primary mirror capable of concentrating electromagnetic radiation from all optical parts of the spectrum and carry scientific instruments which will record ultrahigh resolution astronomical images. The telescope's scientific instrument section will include a high speed photometer, a high resolution spectrograph, a faint object spectrograph, a wide field planetary camera, and a faint object camera

81A42511 ISSUE 19 PAGE 3273 CATEGORY 12 81/00/00
201 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Update on space. Volume 1 --- Book
AUTH: A/BLUTH, B. J.; B/MCNEAL, S. R. PAT: A/(ED.)
SAP: $8.00
CIO: UNKNOWN
Granada Hills, CA, National Behavior Systems, 1981. 201 p (For individual items see A81-42512 to A81-42518)
MAJS: /*SPACE INDUSTRIALIZATION/*SPACE MANUFACTURING/*SPACE STATIONS
MINS: / AEROSPACE ENVIRONMENTS/ EXTRATERRESTRIAL ENVIRONMENTS/ MILITARY OPERATIONS/ MILITARY SPACECRAFT/ PHYSIOLOGICAL EFFECTS/ PSYCHOLOGICAL EFFECTS/ SOLAR POWER SATELLITES/ SPACE COMMERCIALIZATION/ SPACE FLIGHT STRESS/ SPACE MANUFACTURING/ SPACE SHUTTLES/ TECHNOLOGICAL FORECASTING
ABA: G.R.
ABS: Developments related to space stations are considered along with the large scale human benefits of space industrialization. Attention is given to psychological and psychophysiological effects of long duration space flight, aspects of materials processing in space, Space Shuttle and solar power satellite systems, the role of the military in space, the future of space programs and the intangible benefits of going into space, and the Extraterrestrial Imperative leading to exoindustrialization and a geolunar industrial system.

80A21996 ISSUE 7 PAGE 1142 CATEGORY 12 79/12/00 4 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Project Ranger - Forging a new era in space science
AUTH: A/CARGILL HALL, R. PAA: A/(USAF, Office of the Historian, Omaha, Neb.)
CIO: UNITED STATES
British Interplanetary Society, Journal (Astronautics History), vol. 32, Dec. 1979, p. 459-462.
MAJS: /*HISTORIES/*LUNAR PHOTOGRAPHY/*RANGER BLOCK 3 TELEVISION SYSTEM/*RANGER LUNAR PROBES/*RANGER PROJECT
MINS: / EXPERIMENT DESIGN/ MISSION PLANNING/ NASA PROGRAMS/ PROJECT MANAGEMENT/ RESEARCH MANAGEMENT/ TECHNOLOGY ASSESSMENT/ TELEMETRY
ABA: V.L.
ABS: The achievements of the NASA sponsored Ranger project and its role in the development of space research are evaluated. The project which consisted of 9 flights over the period from 1959 to 1965, provided the first close-up television pictures of the moon surface which confirmed the design selected for the Apollo lander. Ranger made visual imaging a basic exploratory tool of planetary science, and also proved the technologies and the designs for NASA's automatic probes for deep-space exploration: attitude stabilization on three axes, onboard computer and sequencer, directional scientific observations, midcourse trajectory and terminal maneuver capability, and steerable high-gain antennas. The project established the respective responsibilities of scientists and engineers within a large space project and indicated possible tradeoffs between schedule, performance and costs.

79A51125 ISSUE 23 PAGE 4436 CATEGORY 81 79/08/00
9 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Large engineering project risk analysis
AUTH: A/CHAPMAN, C. B. PAA: A/(Southampton, University, Southampton, England)
CIO: UNITED KINGDOM
IEEE Transactions on Engineering Management, vol. EM-26, Aug. 1979, p. 78-86.
MAJS: /*DECISION MAKING/*ENGINEERING MANAGEMENT/*MANAGEMENT PLANNING/*MARKOV PROCESSES/*PROJECT MANAGEMENT/*RISK
MINS: / FINANCIAL MANAGEMENT/ PROBABILITY THEORY/ STATISTICAL DECISION THEORY/ TREES (MATHEMATICS)/ VALUE ENGINEERING
ABA: C.F.W.
ABS: The procedures developed during risk analysis for plan approval of an offshore pipeline project in the North Sea are examined. The current status of Synergistic Contingency Evaluation and Response Techniques (SCERT), a systematic approach to planning and financial evaluation of large engineering projects involving significant risks, is described, employing a decision tree/semi-Markov process based on risk mathematics. Four phases are described: scope, structure, parameter, and manipulation and interpretation, which cover all aspects of risk and activity identification as well as the responses to the generated risks. Attention is given to the feature of probablistic decision trees in a fixed-time frame semi-Markov process framework, which uses conditional probability distributions directly as opposed to utility measures. It was determined that there exists a need for a comprehensive view of risks, if risk measurements are to be useful as well as a synergistic framework involving the

efficient use of a range of special expertise with a minimum of communication interpretation problems.

79A23628 ISSUE 8 PAGE 1329 CATEGORY 1 79/00/00 8 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: The logistics of life cycle cost --- in operations and support systems for fighter aircraft
AUTH: A/PERONNET, J. R. PAA: A/(Grumman Aerospace Corp., Bethpage, N.Y.)
CIO: UNITED STATES
(Society of Reliability Engineers, Canadian Reliability Symposium, 5th, Ottawa, Canada, Oct. 19, 20, 1978.) Microelectronics and Reliability, vol. 19, no. 1-2, 1979, p. 23-30.
MAJS: /*AIRCRAFT MAINTENANCE/*FIGHTER AIRCRAFT/*LIFE CYCLE COSTS /*LOGISTICS MANAGEMENT/*MILITARY AVIATION/*SUPPORT SYSTEMS
MINS: / A-6 AIRCRAFT/ AEROSPACE TECHNOLOGY TRANSFER/ CANADA/ ENGINEERING MANAGEMENT/ MANAGEMENT SYSTEMS/ OPERATIONS RESEARCH/ PROJECT PLANNING/ SYSTEMS ENGINEERING
ABA: B.J.
ABS: Key aspects of life cycle cost (LCC) methodology synthesis are reviewed and the ease of program application and integration is illustrated on such programs as the Canadian New Fighter Aircraft concept. Consideration is also given to the interrelationship between hardware design, ILS resource requirements, and program cost impacts of prime support postures as well as alternate support plan concepts. It is concluded that by selectively blending and tailoring the available logistic analysis tools such as LSA and Pareto analysis within an interactive phased program analysis approach and applying the discipline inherent in the systems engineering process, an orderly consistent and expanding data base can be developed on a program upon which alternate support concepts can be realistically projected and tested.

79A20767* ISSUE 7 PAGE 1122 CATEGORY 12 78/00/00 45 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Planning for large construction projects in space
AUTH: A/DISHER, J. H. PAA: A/(NASA, Office of Space Flight, Washington, D.C.)
CORP: National Aeronautics and Space Administration, Washington, DC.
CIO: UNITED STATES
In: Using space - Today and tomorrow; Proceedings of the Twenty-eighth International Astronautical Congress, Prague, Czechoslovakia, September 25-October 1, 1977. Volume 1. (A79-20765 07-12) Oxford, Pergamon Press, Ltd., 1978, p. 79-123.
MAJS: /*LARGE SPACE STRUCTURES/*MISSION PLANNING/*ORBITAL ASSEMBLY/*SPACE INDUSTRIALIZATION
MINS: / EXTRAVEHICULAR ACTIVITY/ FABRICATION/ REMOTE HANDLING/ SPACE COMMERCIALIZATION/ SPACE PROCESSING/ SPACECRAFT DESIGN/ SPACECRAFT POWER SUPPLIES/ SPACELAB/ TELEOPERATORS
ABA: P.T.H.
ABS: The paper discusses briefly some broad plans for developing the technology needed for large construction projects in space ranging from orbiting solar power stations to large communications antennas. Space construction classes include assembly of modules, deployment of compacted structures, assembly of passive preformed pieces, and fabrication of structures from sheet stock. Technological areas related to structural concepts include (1) analyses for prediction of structural behavior, structural/control interaction, electromagnetic and control performance, and integrated design development; (2) electronics for signal conditioning and data acquisition, power distribution, and signal channel interference and multipaction; (3) concepts for shape control, attitude/pointing control, and orbital transfer and station keeping; and (4) materials and techniques for 30-year dimensional stable composites, thermal control, thin-lightweight structural alloys, and material joining in space. The concept of a power module for the construction operations is discussed along with a concept for a habitability module.

74A11539* ISSUE 1 PAGE 160 CATEGORY 34 73/00/00 8 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: The growing importance of costs and ways to maintain cost control on a large program in today's competitive environment
AUTH: A/NEWMAN, J. J.; B/GRIMES, D. W.; C/GAETANO, F. W. PAA: A/(RCA, Astro-Electronics Div., Princeton, N.J.); B/(NASA, Goddard Space Flight Center, Greenbelt, Md.); C/(NASA, Washington, D.C.)
CIO: UNITED STATES
In: The impact of competitive technology on engineering management; Annual Joint Engineering Management Conference, 21st, St. Petersburg, Fla., October 25, 26, 1973, Record. Conference sponsored by ASQC, EIC, ISA, AIIE, ASME, and NSPE. New York, American Society of Mechanical Engineers, 1973, p. 57-64.
MAJS: /*COST EFFECTIVENESS/*MANAGEMENT PLANNING/*PROJECT MANAGEMENT/*RESEARCH MANAGEMENT/*SPACE PROGRAMS
MINS: / AEROSPACE INDUSTRY/ CONTRACT MANAGEMENT/ COST REDUCTION/ GOVERNMENT/INDUSTRY RELATIONS/ INCENTIVE TECHNIQUES/ MANAGEMENT METHODS
ABA: M.V.E.
ABS: Discussion of management techniques that make it possible to overcome inflationary and developmental cost rises while holding schedule and performance fixed in scientific space programs. The techniques reviewed pertain to high personnel motivation, continual review of contract rigidity for de facto modification by senior judgment, standardization vs design innovation, cooperative customer/contractor goal orientation vs task orientation, and deep real-time management visibility.

73A27400 ISSUE 12 PAGE 1561 CATEGORY 34 72/00/00
275 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: The Polaris system development: Bureaucratic and programmatic success in government.
UNOC: Book - The Polaris system development: Bureaucratic and programmatic success in government.
AUTH: A/SAPOLSKY, H. M. PAA: A/(MIT, Cambridge, Mass.)
SAP: $9.95
CIO: UNITED STATES
Cambridge, Mass., Harvard University Press, 1972, 275 p.
MAJS: /*POLARIS MISSILES/*PROJECT MANAGEMENT/*WEAPON SYSTEMS/*WEAPONS DEVELOPMENT
MINS: / GOVERNMENT PROCUREMENT/ GOVERNMENT/INDUSTRY RELATIONS/ INCENTIVE TECHNIQUES/ MANAGEMENT ANALYSIS/ MANAGEMENT METHODS/ PERT/ PROCUREMENT POLICY/ SYSTEMS MANAGEMENT
ABA: G.R.
ABS: The book attempts to explain the requirements of success in government. It is maintained that in order for a program to be successful it must be protected by its proponents from the challenges of competitors and the intervention of review agencies. Strategies in bureaucratic politics are a vital factor. The four strategies used by the Polaris proponents include differentiation, moderation, cooptation, and managerial innovation. Particular attention is given to the role that management mythologizing played in the success of the Polaris program. Problems in the acquisition of weapons are also considered, taking into account government-contractor relations, the control of uncertainties, project and functional structures, and the use of incentive contracts.

73A25450* ISSUE 11 PAGE 1454 CATEGORY 34 73/05/00
5 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Logistics planning for phased programs.
UNOC: Logistics planning with cost reduction for NASA phased programs in conducting R and D and real time inventory control, discussing major activities and objectives
AUTH: A/COOK, W. H. PAA: A/(NASA, Washington, D.C.)
CIO: UNITED STATES
Logistics Spectrum, vol. 7, Spring 1973, p. 2-5, 40.
MAJS: /*COST REDUCTION/*LOGISTICS MANAGEMENT/*MANAGEMENT PLANNING/*NASA PROGRAMS/*PROJECT PLANNING
MINS: / INVENTORY MANAGEMENT/ PROCUREMENT MANAGEMENT/ REAL TIME OPERATION/ RESEARCH AND DEVELOPMENT/ SCHEDULING/ SYSTEMS ENGINEERING
ABA: G.R.
ABS: It is pointed out that the proper and early integration of logistics planning into the phased program planning process will drastically reduce these logistics costs. Phased project planning is a phased approach to the planning, approval, and conduct of major research and development activity. A progressive build-up of knowledge of all aspects of the program is provided. Elements of logistics are discussed together with aspects of integrated logistics support, logistics program planning, and logistics activities for phased programs. Continuing logistics support can only be assured if there is a comprehensive sequential listing of all logistics activities tied to the program schedule and a real-time inventory of assets.

71A43452 ISSUE 23 CATEGORY 34 71/00/00 27 PAGES
UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: A management model for a large project
UNOC: Large project management model, presenting schematic diagrams for nature and interrelation of functions
AUTH: A/SEWELL, H. B., JR. PAN: (AA/BOEING INTERNATIONAL CORP., LONDON, ENGLAND/.)
CIO: UNITED KINGDOMLONDON, GORDON AND BREACH, SCIENCE PUBLISHERS, LTD., IN- LARGE SPACE PROGRAMS MANAGEMENT, PROCEEDINGS OF THE EUROPEAN COLLOQUIUM, PARIS AND NEUILLY-SUR-SEINE, FRANCE, FEB. 9-13, 1970. P. 3-29. /A71-43451 23-34/
MAJS: /*MANAGEMENT ANALYSIS/*MATHEMATICAL MODELS/*PROJECT MANAGEMENT
MINS: / CONFERENCES/ COST ESTIMATES/ DIAGRAMS/ MANAGEMENT PLANNING/ PROGRAMMING (SCHEDULING)

70A42314 ISSUE 22 PAGE 4126 CATEGORY 34 10/00/00
197 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: The decision to go to the moon- Project Apollo and the national interest
UNOC: Book on decision making in U.S. manned lunar landing commitment covering space policy, technical planning, national interests, Apollo experience, etc
AUTH: A/LOGSDON, J. M. PAN: (AA/CATHOLIC U. OF AMERICA, WASHINGTON, D.C./.)
SAP: $10.00.
CIO: UNITED STATESCAMBRIDGE, MASS., MIT PRESS, RESEARCH SUPPORTED BY THE RELM FOUNDATION.
MAJS: /*APOLLO PROJECT/*DECISION MAKING/*LUNAR LANDING/*MANNED SPACE FLIGHT
MINS: / MISSION PLANNING/ SPUTNIK 1 SATELLITE

70A16709* ISSUE 5 PAGE 808 CATEGORY 5 69/00/00 2 PAGES UNCLASSIFIED DOCUMENT COPYRIGHT
UTTL: Some lessons learned in clean room design
UNOC: Clean room design problems concerning dampers, high pressure blowers, humidifiers, filters, etc
AUTH: A/WEBER, G. F. PAN: (AA/CALIFORNIA INST. OF TECH., JET PROPULSION LAB., PLANT ENGINEERING DIV., PASADENA, CALIF./.)
CIO: UNITED STATESBOSTON, AMERICAN ASSN. FOR CONTAMINATION CONTROL, IN- AMERICAN ASSN. FOR CONTAMINATION CONTROL, ANNUAL TECHNICAL MEETING AND EXHIBIT, 8TH, NEW YORK, N.Y., MAY 19-22, 1969, PROCEEDINGS. P. 73, 74. /A70-16701 05-03/

MAJS: /*CLEAN ROOMS/*ENVIRONMENTAL CONTROL/*STRUCTURAL DESIGN/*TEST FACILITIES
MINS: / CONFERENCES/ DECONTAMINATION/ ENVIRONMENTAL LABORATORIES / FILTERS/ JET PROPULSION/ OSCILLATION DAMPERS/ RESEARCH AND DEVELOPMENT/ SPACECRAFT STERILIZATION

90N71002* CATEGORY 38 RPT#: NASA-TM-102990 NAS 1.15:102990 66/00/00 446 PAGES UNCLASSIFIED DOCUMENT

UTTL: Second NASA-Wide Reliability and Quality Assurance Meeting
CORP: National Aeronautics and Space Administration, Washington, DC.
SAP: Avail: NTIS
CIO: UNITED STATES Meeting held in Washington, DC, 29 Nov. - 1 Dec. 1966
MAJS: /*AEROSPACE SCIENCES/*PROJECT MANAGEMENT/*QUALITY CONTROL/*RELIABILITY ENGINEERING/*VALUE ENGINEERING
MINS: / PRODUCT DEVELOPMENT/ SATELLITE CONFIGURATIONS/ SPACECRAFT PERFORMANCE/ SYSTEM EFFECTIVENESS

90N70845* CATEGORY 81 RPT#: NASA-CR-109172 NAS 1.26:109172 WORKING-PAPER-22-PT-2 CNT#: NGL-33-022-090 69/10/00 51 PAGES UNCLASSIFIED DOCUMENT

UTTL: Project management and the organization, part 2
AUTH: A/ANNA, HENRY J.; B/FREDERICKSON, HENRY G.
CORP: Syracuse Univ., NY.
SAP: Avail: NTIS
CIO: UNITED STATES
MAJS: /*APOLLO PROJECT/*PROJECT MANAGEMENT/*TECHNOLOGIES
MINS: / COMMUNICATING/ ORGANIZATIONS/ PERSONNEL/ RELATIONSHIPS

90N70746* CATEGORY 81 RPT#: NASA-CR-109159 NAS 1.26:109159 WORKING-PAPER-11-PT-2 CNT#: NGL-33-022-090 69/08/00 35 PAGES UNCLASSIFIED DOCUMENT

UTTL: The NASA scheduling system: Scheduling in project management, part 2
AUTH: A/HOPEMAN, RICHARD J.
CORP: Syracuse Univ., NY.
SAP: Avail: NTIS
CIO: UNITED STATES
MAJS: /*APOLLO PROJECT/*PROJECT MANAGEMENT/*SCHEDULING
MINS: / COSTS/ LOGISTICS/ PERFORMANCE TESTS/ QUALITY CONTROL/ RELIABILITY ENGINEERING/ RESEARCH AND DEVELOPMENT

90N70744* CATEGORY 81 RPT#: NASA-CR-109156 NAS 1.26:109156 WORKING-PAPER-8 CNT#: NGL-33-022-090 69/07/00 24 PAGES UNCLASSIFIED DOCUMENT

UTTL: NASA and the Apollo program
AUTH: A/POOLER, WILLIAM; B/SALLETT, ALPHONSE
CORP: Syracuse Univ., NY.
SAP: Avail: NTIS
CIO: UNITED STATES

MAJS: /*APOLLO PROJECT/*DOCUMENTATION/*MANNED SPACE FLIGHT/*NASA PROGRAMS/*PROJECT MANAGEMENT/*RESEARCH PROJECTS
MINS: / ORGANIZATIONS/ PERSONNEL/ PROBLEM SOLVING/ SYSTEMS ENGINEERING

70N77748* RPT#: NASA-CR-110829 REPT-1 CNT#: NGL-33-022-090 69/07/00 19 PAGES UNCLASSIFIED DOCUMENT

UTTL: Project authority - A multidimensional view
AUTH: A/CICERO, J. P.; B/WILEMON, D. L.
CORP: Syracuse Univ., NY.
CIO: UNITED STATES SUBMITTED FOR PUBLICATION
MAJS: /*MANAGEMENT PLANNING/*MODELS/*PROJECT MANAGEMENT
MINS: / APOLLO PROJECT/ ORGANIZING

91N15773*# ISSUE 7 PAGE 1051 CATEGORY 61 RPT#: NASA-TM-103417 NAS 1.15:103417 SEL-84-101-REV-1 90/11/00 90 PAGES UNCLASSIFIED DOCUMENT
Revised

UTTL: Manager's handbook for software development, revision 1
CORP: National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.
SAP: Avail: NTIS HC/MF A05
CIO: UNITED STATES
MAJS: /*COMPUTER PROGRAMMING/*COMPUTER PROGRAMS/*PROJECT MANAGEMENT/*SCHEDULING/*SOFTWARE ENGINEERING
MINS: / AERODYNAMICS/ CERTIFICATION/ COSTS/ DELIVERY/ DOCUMENTS/ ESTIMATING/ HANDBOOKS
ABA: Author
ABS: Methods and aids for the management of software development projects are presented. The recommendations are based on analyses and experiences of the Software Engineering Laboratory (SEL) with flight dynamics software development. The management aspects of the following subjects are described: organizing the project, producing a development plan, estimating costs, scheduling, staffing, preparing deliverable documents, using management tools, monitoring the project, conducting reviews, auditing, testing, and certifying.

91N12208# ISSUE 3 PAGE 397 CATEGORY 54 RPT#: AD-A225122 ARI-RP-90-19A-VOL-1 CNT#: MDA903-86-C-0298 DA PROJ. 2Q2-63007-A-793 90/05/00 163 PAGES UNCLASSIFIED DOCUMENT

UTTL: Hardware versus manpower compatibility methodology. Volume 1: Overview and manager's guide TLSP: Final Report, Sep. 1986 - Mar. 1988
AUTH: A/HERLIHY, DAVID; B/BONDARUK, JANE; C/NICHOLAS, GUY; D/GUPTILL, ROBERT; E/PARK, JOHN
CORP: Dynamics Research Corp., Wilmington, MA.
SAP: Avail: NTIS HC/MF A08
CIO: UNITED STATES
MAJS: /*ARMED FORCES (UNITED STATES)/*COMPATIBILITY/*MANAGEMENT

PLANNING/*MANPOWER/*PERSONNEL DEVELOPMENT/*SYSTEMS ANALYSIS/*TRAINING ANALYSIS/*WEAPON SYSTEMS
MINS: / AIR DEFENSE/ ARMOR/ ARTILLERY/ COMMAND AND CONTROL/ DATA BASES/ DOCUMENTS/ INTELLIGENCE/ TRADEOFFS
ABA: GRA
ABS: The Army Hardware vs. Manpower (HARDMAN) Comparability Methodology (HCM) is a six-step process for determining a weapon system's manpower, personnel, and training (MPT) requirements. It provides a structured approach for early MPT estimation based on comparability analysis, an analytic system that uses knowledge about similar existing systems and technological growth trends to project the MPT requirements of proposed new systems. The HCM's six interrelated steps are Systems Analysis, Manpower Requirements Analysis, Personnel Pipeline Analysis, Training Resource Requirements Analysis, Impact Analysis, and Tradeoff Analysis. The HCM has been successfully applied to a range of weapons systems, including air, armor, artillery, infantry, air defense, command and control, and intelligence systems. The Product Improvement Program for HCM made major revisions to the existing HCM Guide. The scope has been expanded to include several new areas; existing procedures have been revised, refined, and clarified; and the entire Guide has been rewritten to achieve greater clarity, consistency, and completeness. This volume addresses the planning and conducting of an HCM analysis. Procedures are provided for determining the analysis scope and estimating the resources required for the analysis. Preparation of the quality assurance plan and establishment of the consolidated database are explained. The relationship between HCM results and various Army MPT documents is also discussed.

91N10793*# ISSUE 1 PAGE 134 CATEGORY 81 RPT#: NASA-CR-187261 NAS 1.26:187261 CNT#: NCC9-16 89/10/00
117 PAGES UNCLASSIFIED DOCUMENT
UTTL: The integrated scheduling system: A case study in project management
AUTH: A/BISHOP, PETER C.; B/LEARNED, DAVID B.; C/YOES, CISSY A.
CORP: Houston Univ., Clear Lake, TX. CSS: (Research Inst. for Computing and Information Systems.)
SAP: Avail: NTIS HC/MF A06
CIO: UNITED STATES
MAJS: /*MANAGEMENT INFORMATION SYSTEMS/*MANAGEMENT PLANNING/*MANAGEMENT SYSTEMS/*PROJECT MANAGEMENT
MINS: / COMMUNICATING/ COMPUTER PROGRAMS/ SCHEDULING/ SPACE STATIONS
ABA: Author
ABS: A prototype project management system was developed for the Level III Project Office for the Space Station Freedom. The main goal was to establish a framework for the Space Station Project Office whereby Project and Office Managers can jointly establish and review scheduled milestones and activities. The objective was to assist office managers in communicating their objectives, milestones, schedules, and other project information more effectively and efficiently. Consideration of sophisticated project management systems was included, but each of the systems had limitations in meeting the stated objectives.

91N10611*# ISSUE 1 PAGE 105 CATEGORY 61 88/11/00
18 PAGES UNCLASSIFIED DOCUMENT
UTTL: Knowledge-based assistance in costing the space station DMS
AUTH: A/HENSON, TROY; B/RONE, KYLE
CORP: International Business Machines Corp., Houston, TX.
SAP: Avail: NTIS HC/MF A16
In NASA, Goddard Space Flight Center, Proceedings of the Thirteenth Annual Software Engineering Workshop 18 p (SEE N91-10606 01-61)
CIO: UNITED STATES
MAJS: /*COST ESTIMATES/*COSTS/*DATA BASES/*DATA MANAGEMENT/*DECISION MAKING/*KNOWLEDGE BASES (ARTIFICIAL INTELLIGENCE)/*MANAGEMENT SYSTEMS/*SPACE STATIONS/*SYSTEMS INTEGRATION
MINS: / ALGORITHMS/ CALIBRATING/ COMPUTER PROGRAMS/ PROTOTYPES/ SPACE SHUTTLES
ABA: Author
ABS: The Software Cost Engineering (SCE) methodology developed over the last two decades at IBM Systems Integration Division (SID) in Houston is utilized to cost the NASA Space Station Data Management System (DMS). An ongoing project to capture this methodology, which is built on a foundation of experiences and lessons learned, has resulted in the development of an internal-use-only, PC-based prototype that integrates algorithmic tools with knowledge-based decision support assistants. This prototype Software Cost Engineering Automation Tool (SCEAT) is being employed to assist in the DMS costing exercises. At the same time, DMS costing serves as a forcing function and provides a platform for the continuing, iterative development, calibration, and validation and verification of SCEAT. The data that forms the cost engineering database is derived from more than 15 years of development of NASA Space Shuttle software, ranging from low criticality, low complexity support tools to highly complex and highly critical onboard software.

90N27544# ISSUE 21 PAGE 3085 CATEGORY 81 RPT#: AD-A223168 90/01/00 295 PAGES UNCLASSIFIED DOCUMENT
UTTL: Systems engineering management guide
AUTH: A/KOCKLER, F.; B/WITHERS, T.; C/POODIACK, J.; D/GIERMAN, M.
CORP: Defense Systems Management School, Fort Belvoir, VA.
SAP: Avail: NTIS HC A13/MF A02; SOD HC $15.00 as 008-020-01202-5
CIO: UNITED STATES

MAJS: /*COMPUTER PROGRAMMING/*ENGINEERING MANAGEMENT/*LIFE CYCLE COSTS/*LOGISTICS MANAGEMENT/*SYSTEMS ENGINEERING
MINS: / COMPUTER PROGRAMS/ EDUCATION/ HANDBOOKS/ LOGISTICS/ MANUFACTURING/ RISK
ABA: GRA
ABS: This is one of a family of educational acquisition management guides written from a Department perspective; e.g., non-service peculiar. These are intended primarily for use in the courses offered by the Defense Systems Management College and secondarily as desk references for DoD Acquisition Managers. This family of guides consists of: (1) Integrated Logistics Support Guide; (2) Mission Critical Computer Resources Management Guide; (3) Test and Evaluation Management Guide; (4) Risk Management Concepts and Guidance; (5) DoD Manufacturing Management Handbook; and (6) Subcontracting Management Handbook. It is designed to: (1) acquaint the newcomer with systems engineering concepts and techniques, and (2) identify relevant directives and references. These concepts, when combined with common sense and technical expertise, constitute the basis of a sound systems engineering program. Highlights are the technical management activities over the system's life cycle from program initiation to system disposal. All activity centers around the system itself; thus, the system configuration at any time is of common interest to all engineering disciplines. These activities are normally divided into functional areas of design, test, manufacturing, and logistics support. Each of these functional areas is active throughout the system's life cycle.

90N25958# ISSUE 20 PAGE 2805 CATEGORY 3 RPT#: GAO/RCED-89-113FS B-222217 89/04/00 131 PAGES UNCLASSIFIED DOCUMENT
UTTL: Aviation safety: Conditions within the air traffic control work force. Fact sheet for congressional requesters
CORP: General Accounting Office, Washington, DC. CSS: (Resources, Community, and Economic Development Div.)
SAP: Avail: NTIS HC AO7/MF AO1; also available from GAO, Gaithersburg, MD HC first five copies are free, additional copies $2.00
CIO: UNITED STATES
MAJS: /*AIR TRAFFIC CONTROLLERS (PERSONNEL)/*AIRCRAFT SAFETY/* CONGRESSIONAL REPORTS/*MORALE/*SAFETY FACTORS/*SURVEYS/* WORKLOADS (PSYCHOPHYSIOLOGY)
MINS: / AIRPORTS/ EDUCATION/ GROUND BASED CONTROL/ PERCEPTION/ PERSONNEL MANAGEMENT/ SYSTEMS ENGINEERING
ABA: J.P.S.
ABS: The complete 1988 questionnaire responses of air traffic controllers, supervisors, and facility managers (the air traffic work force) are compared with those of the air traffic control work force survey done in 1985. The 1985 questions were replicated, and new ones were added. The survey and scope of and methodology are described and the responses to each question are summarized for the air route traffic control centers, which control flights between airports and over oceanic routes; the largest terminals; and the overall combined responses of centers and terminals. The questions and responses address a variety of air traffic issues facing the Federal Aviation Administration (FAA), including, among others, work load, staffing, overtime, training, morale, and system safety. The perceptions of the air traffic work force on these subjects have changed little since the 1985 survey.

89N25475# ISSUE 19 PAGE 2722 CATEGORY 38 RPT#: DE89-008121 UCRL-100655 CONF-890691-1 CNT#: W-7405-ENG-48 89/03/03 7 PAGES UNCLASSIFIED DOCUMENT
UTTL: Learning the value of VE
AUTH: A/SPERLING, ROGER B.
CORP: Lawrence Livermore National Lab., CA.
SAP: Avail: NTIS HC AO2/MF AO1
CIO: UNITED STATES Presented at the Society of American Value Engineers International Conference, Indianapolis, IN, 12 Jun. 1989
MAJS: /*COST ANALYSIS/*COST REDUCTION/*PROJECT MANAGEMENT/*VALUE ENGINEERING
MINS: / COST EFFECTIVENESS/ DESIGN ANALYSIS
ABA: DOE
ABS: Describing lessons learned from Value Engineers (VE) studies at a government-funded research laboratory reveals how project managers were encouraged to use VE and how their projects benefited from the VE savings. The five major lessons were: An officer of free VE is a low-risk incentive to encourage the use of VE; More costs savings can be identified by VE studies than cost reviews or design reviews; Large projects can benefit from repeat VE studies; VE teams can identify surprising savings when allowed to challenge all design criteria; VE programs can be costs effective even though return on investment may vary among projects.

86N28012# ISSUE 18 PAGE 2976 CATEGORY 81 RPT#: DE86-005396 DOE/RW-0043 86/01/00 95 PAGES UNCLASSIFIED DOCUMENT
UTTL: Program Management System manual
CORP: Department of Energy, Washington, DC. CSS: (Office of Civilian Radioactive Waste Management.) AVAIL.NTIS
SAP: HC AO5/MF AO1
CIO: UNITED STATES
MAJS: /*MANAGEMENT SYSTEMS/*MANUALS/*PROJECT MANAGEMENT/*QUALITY CONTROL/*WASTE TREATMENT
MINS: / POLICIES/ PROCEDURES/ RADIOACTIVE WASTES/ REGULATIONS/ SAFETY/ SYSTEMS ENGINEERING
ABA: DOE
ABS: The Program Management System (PMS), as detailed in this manual, consists of all the plans, policies, procedure, systems, and processes that, taken together, serve as a

mechanism for managing the various subprograms and program elements in a cohesive, cost effective manner. The PMS is consistent with the requirements of the Nuclear Waste Policy Act of 1982 and the Mission Plan for the Civilian Radioactive Waste Management Program (DOE/RW-0005). It is based on, but goes beyond, the DOE management policies and procedures applicable to all DOE programs by adapting these directives to the specific needs of the Civilian Radioactive Waste Management program. This PMS Manual describes the hierarchy of plans required to develop and maintain the cost, schedule, and technical baselines at the various organizational levels of the Civilian Radioactive Management Program. It also established the management policies and procedures used in the implementation of the program. These include requirements for internal reports, data, and other information; systems engineering management; regulatory compliance; safety; quality assurance; and institutional affairs. Although expanded versions of many of these plans, policies, and procedures are found in separate documents, they are an integral part of this manual. The PMS provides the basis for the effective management that is needed to ensure that the Civilian Radioactive Waste Management Program fulfills the mandate of the Nuclear Waste Policy Act of 1982.

85N12772# ISSUE 3 PAGE 436 CATEGORY 81 RPT#: AD-A145318 ACSC-84-0225 84/04/00 44 PAGES UNCLASSIFIED DOCUMENT

UTTL: Matrix organizations: Overcoming the disadvantages
AUTH: A/BERG, H. E.
CORP: Air Command and Staff Coll., Maxwell AFB, AL. AVAIL.NTIS
SAP: HC A03/MF A01
CIO: UNITED STATES
MAJS: /*MANAGEMENT PLANNING/*ORGANIZATIONS
MINS: / EVALUATION/ MANAGEMENT SYSTEMS/ PERSONNEL/ PROJECT MANAGEMENT
ABA: GRA
ABS: This paper is a background on the matrix management organizational structure. The author identifies typical disadvantages of the matrix organization with the focus on project and functional managers, functional experts, and project teams. Various techniques to counteract these disadvantages are examined and evaluated for potential application in matrix organizations.

84N27817*# ISSUE 18 PAGE 2806 CATEGORY 18 RPT#: NASA-CR-173691 NAS 1.26:173691 83/04/00 68 PAGES UNCLASSIFIED DOCUMENT

UTTL: Space station needs, attributes and architectural options: Mission requirements TLSP: Final Study Report
CORP: McDonnell-Douglas Corp., Saint Louis, MO. AVAIL.NTIS
SAP: HC A04/MF A01
CIO: UNITED STATES Sponsored by NASA
MAJS: /*ECONOMIC ANALYSIS/*FLIGHT OPERATIONS/*MISSION PLANNING/*PROJECT MANAGEMENT/*SPACE MISSIONS/*SPACE STATIONS
MINS: / EXPERIMENT DESIGN/ HUMAN FACTORS ENGINEERING/ LASER APPLICATIONS/ SPACEBORNE EXPERIMENTS/ TECHNOLOGICAL FORECASTING
ABA: M.A.C.
ABS: Various mission requirements for the proposed space station are examined. Subjects include modelling methodology, science applications, commercial opportunities, operations analysis, integrated mission requirements, and the role of man in space station functions and activities. The information is presented through the use of graphs.

84N27814*# ISSUE 18 PAGE 2806 CATEGORY 18 RPT#: NASA-CR-173692 NAS 1.26:173692 LMSC-D889718 CNT#: NASW-3684 83/04/22 48 PAGES UNCLASSIFIED DOCUMENT

UTTL: Space station needs, attributes and architectural options: Study summary TLSP: Final Study Report, 23 Aug. 1982 - 22 Apr. 1983
CORP: Lockheed Missiles and Space Co., Sunnyvale, CA. AVAIL.NTIS
SAP: HC A03/MF A01
CIO: UNITED STATES
MAJS: /*ARCHITECTURE/*MISSION PLANNING/*PROJECT MANAGEMENT/*SPACE MISSIONS/*SPACE STATIONS/*SYSTEMS ENGINEERING
MINS: / COST EFFECTIVENESS/ ECONOMIC ANALYSIS/ EXPERIMENT DESIGN / SPACE COMMERCIALIZATION/ SPACE MAINTENANCE/ SPACE MANUFACTURING/ TECHNOLOGIES
ABA: M.A.C.
ABS: Space station needs, attributes, and architectural options that affect the future implementation and design of a space station system are examined. Requirements for candidate missions are used to define functional attributes of a space station. Station elements that perform these functions form the basic station architecture. Alternative ways to accomplish these functions are defined and configuration concepts are developed and evaluated. Configuration analyses are carried to the point that budgetary cost estimates of alternate approaches could be made. Emphasis is placed on differential costs for station support elements and benefits that accrue through use of the station.

84N27813*# ISSUE 18 PAGE 2806 CATEGORY 18 RPT#: NASA-CR-173715 NAS 1.26:173715 LMSC/D889718-VOL-4-TASK-2/3 CNT#: NASW-3684 83/04/05 389 PAGES UNCLASSIFIED DOCUMENT

UTTL: Space station needs, attributes and architectural options. Volume 4, task 2 and 3: Mission implementation and cost TLSP: Final Report
CORP: Lockheed Missiles and Space Co., Sunnyvale, CA. AVAIL.NTIS

SAP: HC A17/MF A03
CIO: UNITED STATES
MAJS: /*ARCHITECTURE/*DESIGN ANALYSIS/*LARGE SPACE STRUCTURES/* MISSION PLANNING/*PROJECT MANAGEMENT/*SPACE STATIONS
MINS: / HUMAN FACTORS ENGINEERING/ MAINTENANCE/ SPACE STATION STRUCTURES/ SPACEBORNE EXPERIMENTS/ SPACECRAFT COMMUNICATION/ TECHNOLOGICAL FORECASTING/ TECHNOLOGY ASSESSMENT
ABA: M.A.C.
ABS: An overview of the basic space station infrastructure is presented. A strong case is made for the evolution of the station using the basic Space Transportation System (STS) to achieve a smooth transition and cost effective implementation. The integrated logistics support (ILS) element of the overall station infrastructure is investigated. The need for an orbital transport system capability that is the key to servicing and spacecraft positioning scenarios and associated mission needs is examined. Communication is also an extremely important element and the basic issue of station autonomy versus ground support effects the system and subsystem architecture.

84N27812*# ISSUE 18 PAGE 2806 CATEGORY 18 RPT#: NASA-CR-173716 NAS 1.26:173716 LMSC/D889718-VOL-3/1-TASK-1 CNT#: NASW-3684 83/04/22 483 PAGES UNCLASSIFIED DOCUMENT
UTTL: Space station needs, attributes and architectural options. Volume 3, attachment 1, task 1: Mission requirements TLSP: Final Report
CORP: Lockheed Missiles and Space Co., Sunnyvale, CA. AVAIL.NTIS
SAP: HC A21/MF A03
CIO: UNITED STATES
MAJS: /*FLIGHT OPERATIONS/*GOVERNMENT/INDUSTRY RELATIONS/* MISSION PLANNING/*PROJECT MANAGEMENT/*SPACE MISSIONS/* SPACE STATIONS
MINS: / LARGE SPACE STRUCTURES/ MAINTENANCE/ ORBITAL MECHANICS/ ORBITAL SERVICING/ SPACEBORNE ASTRONOMY/ SPACEBORNE EXPERIMENTS
ABA: M.A.C.
ABS: The development and systems architectural requirements of the space station program are described. The system design is determined by user requirements. Investigated topics include physical and life science experiments, commercial utilization, U.S. national security, and remote space operations. The economic impact of the space station program is analyzed.

84N27809*# ISSUE 18 PAGE 2805 CATEGORY 18 RPT#: NASA-CR-173714 NAS 1.26:173714 CNT#: NAS2-3682 82/11/17 302 PAGES UNCLASSIFIED DOCUMENT
UTTL: A study of space station needs, attributes and architectural options, midterm briefing TLSP: Final Report
CORP: General Dynamics Corp., San Diego, CA. CSS: (Convair Div.) AVAIL.NTIS
SAP: HC A14/MF A02
CIO: UNITED STATES
MAJS: /*ORBIT TRANSFER VEHICLES/*SPACE MISSIONS/*SPACE PLATFORMS /*SPACE STATIONS
MINS: / DEFENSE PROGRAM/ ECONOMIC FACTORS/ MANAGEMENT PLANNING/ MISSION PLANNING/ ORBITAL SERVICING/ SPACE COMMERCIALIZATION/ SPACE PROCESSING
ABA: R.S.F.
ABS: The benefits, costs, and mission requirements of the space station are considered. Five mission categories were identified: (1) science, (2) applications, (3) commercial, (4) U.S. national security, and (5) space operations. The orbit transfer vehicle (OTV) is discussed in detail.

84N27807*# ISSUE 18 PAGE 2805 CATEGORY 18 RPT#: NASA-CR-173689 NAS 1.26:173689 GDC-ASP-83-004 CNT#: NASW-3682 83/04/22 4 VOLS 161 PAGES UNCLASSIFIED DOCUMENT
UTTL: A study of space station needs, attributes and architectural options, volume 2, technical. Book 3: Economic benefits, costs and programmatics TLSP: Final Report
CORP: General Dynamics/Convair, San Diego, CA. AVAIL.NTIS
SAP: HC A08/MF A01
CIO: UNITED STATES
MAJS: /*ARCHITECTURE/*FLIGHT OPERATIONS/*SPACE MISSIONS/*SPACE STATIONS/*TECHNOLOGICAL FORECASTING/*TECHNOLOGY ASSESSMENT
MINS: / COST EFFECTIVENESS/ ECONOMIC ANALYSIS/ ECONOMIC IMPACT/ GOVERNMENT/INDUSTRY RELATIONS/ ORBIT TRANSFER VEHICLES/ PROJECT MANAGEMENT/ SPACE COMMERCIALIZATION
ABA: M.A.C.
ABS: The economic benefits, cost analysis, and industrial uses of the manned space station are investigated. Mission payload costs are examined in relation to alternative architectures and projected technological evolution. Various approaches to industrial involvement for financing, development, and marketing of space station resources are described.

84N25737*# ISSUE 16 PAGE 2454 CATEGORY 12 RPT#: NASA-SP-4208 NAS 1.21:4208 LC-81-22424 83/00/00 466 PAGES UNCLASSIFIED DOCUMENT
UTTL: Living and working in space. A history of Skylab
AUTH: A/COMPTON, W. D.; B/BENSON, C. D.
CORP: National Aeronautics and Space Administration, Washington, DC. AVAIL.NTIS
SAP: MF A03; SOD HC $20.00 as 033-000-00847-3
CIO: UNITED STATES Original document contains color illustrations
MAJS: /*EXPERIMENT DESIGN/*HISTORIES/*PROJECT MANAGEMENT/*SKYLAB PROGRAM/*SPACE MISSIONS/*SPACEBORNE EXPERIMENTS/*

SPACECRAFT ENVIRONMENTS
MINS: / AEROSPACE MEDICINE/ EARTH RESOURCES/ EDUCATION/ SPACEBORNE ASTRONOMY/ SPACECRAFT COMMUNICATION/ SPACECRAFT DOCKING
ABA: M.A.C.
ABS: The history of Skylab is examined with emphasis on program development from previous Apollo missions, modifications to spacecraft, onboard experiments, and flight crew training. A listing of the missions and an evaluation of results are included with a brief description of the workshop's reentry.

84N23372# ISSUE 13 PAGE 2062 CATEGORY 81 RPT#:
AD-P002827 83/00/00 3 PAGES UNCLASSIFIED DOCUMENT

UTTL: Improving the effectiveness of award fee contracts for program management support services TLSP: Final Report
AUTH: A/MEINERS, A. C., JR.
CORP: Advanced Technology, Inc., Arlington, VA. AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp. with Theme p 481-483 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*CONTRACT INCENTIVES/*CONTRACT MANAGEMENT/*GOVERNMENT PROCUREMENT/*PERSONNEL MANAGEMENT/*PROCUREMENT MANAGEMENT /*PROJECT MANAGEMENT/*SYSTEM EFFECTIVENESS
MINS: / AWARDS/ MANAGEMENT ANALYSIS/ MANAGEMENT METHODS/ MANAGEMENT PLANNING/ SERVICES/ SUPPORTS
ABA: Author (GRA)
ABS: This article reports on a method to improve the effectiveness of Cost Plus Award Fee contracts used for program management support services. The approach involves allowing employee participation in the receipt of award fee dollars thru a concept called Cost Plus Award Fee, Employee Participation, CPAF (EP). An example of an unsuccessful attempt to use CPAF (EP) is presented and a possible solution to problems associated with the use of EP on support service contracts is introduced. The recommended solution is centered around the use of a criteria oriented EP system, similar to criteria developed for Cost/Schedule Criteria System. A major element in the EP system presented is simplicity, in that any EP system must be easy for a contractor to administer. The article concludes with a structured recommendation that CPAF (EP) criteria be developed and tested.

84N23369# ISSUE 13 PAGE 2061 CATEGORY 81 RPT#:
AD-P002824 83/00/00 6 PAGES UNCLASSIFIED DOCUMENT

UTTL: Project management: Evolution and influence TLSP: Final Report
AUTH: A/CLELAND, D. I.
CORP: Pittsburgh Univ., PA. AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp. with Theme p 454-459 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*MANAGEMENT PLANNING/*ORGANIZATIONS/*PROJECT MANAGEMENT
MINS: / BUDGETING/ CONFERENCES/ GOVERNMENT PROCUREMENT/ MANAGEMENT SYSTEMS/ PROGRAMMING/ QUALITY/ RESOURCES MANAGEMENT/ SYSTEM EFFECTIVENESS
ABA: GRA
ABS: This paper will briefly examine the evolution of the theory and practice of project (program) management as an integral part of the management discipline. This examination will hint at the origins of project (program) management and how it has influenced the management of contemporary organizations. The authors will review some of the influences that project management has had on contemporary organizations.

84N23339# ISSUE 13 PAGE 2057 CATEGORY 83 RPT#:
AD-P002792 83/00/00 4 PAGES UNCLASSIFIED DOCUMENT

UTTL: The problem of cost growth TLSP: Final Report
AUTH: A/MCNICHOLS, G. R.; B/MCKINNEY, B. J.
CORP: Management Consulting and Research, Inc., Falls Church, VA. AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp. with Theme p 251-254 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*COST ANALYSIS/*COSTS/*GOVERNMENT PROCUREMENT
MINS: / BUDGETING/ CONTRACT MANAGEMENT/ COST ESTIMATES/ GROWTH/ MANAGEMENT PLANNING/ REGULATIONS/ REQUIREMENTS/ SPECIFICATIONS/ WEAPON SYSTEMS
ABA: GRA
ABS: There is a substantial amount of rhetoric on the subject of cost growth. Usually, we blame such growth on inflation. There are, in fact, several views on the reasons for cost growth or the measures used to calculate and present cost increases by weapon system. MCR has conducted studies of cost growth for many years. This particular paper will discuss the problem from an historical perspective, and present actual results from an analysis of the 31 December 1982 Selected Acquisition Reports (SARs).

84N23338# ISSUE 13 PAGE 2056 CATEGORY 81 RPT#:
AD-P002791 83/00/00 8 PAGES UNCLASSIFIED DOCUMENT

UTTL: Reshaping the philosophy of spare parts acquisition: Project PACER PRICE TLSP: Final Report
AUTH: A/LEININGER, G.
CORP: Oklahoma City Air Logistics Center, Tinker AFB, OK.

AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp. with Theme p 239-242 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*GOVERNMENT PROCUREMENT/*SPARE PARTS
MINS: / CONTRACT MANAGEMENT/ COST ANALYSIS/ COST EFFECTIVENESS/ MANAGEMENT PLANNING/ OPTIMIZATION/ REGULATIONS/ REQUIREMENTS/ RESOURCES
ABA: Author (GRA)
ABS: On June 1st, 1983, a new program called PACER PRICE began operation at the Oklahoma City Air Logistics Center. Staffed by an interdirectorate group of engineers, manufacturing planners, price analysts and packaging specialists, the program was designed as a thorough and comprehensive review process to determine optimum purchase method and price for every actively-purchased replenishment spare part managed at the Center. After three months of program operation, approximately 62 percent of the sole-source items have been recommended for competitive purchase, and the prices recommended for these items average about 35 percent below the latest contract prices adjusted for quantity and inflation. But beyond that, a new Philosophy of spare parts purchase has been formulated and effected as a procedural caveat: All spares should be both purchased competitively and PRICED TO CONFORM WITH COMPETITIVE-MARKET PRICES. The paper focuses on this philosophy, detailing in particular the mathematical models used to simulate competitive prices, and offers suggestions for further research into the competitive market place.

84N23335# ISSUE 13 PAGE 2056 CATEGORY 81 RPT#:
AD-P002788 83/00/00 3 PAGES UNCLASSIFIED DOCUMENT

UTTL: Risk analysis: Comparing different contract types TLSP: Final Report
AUTH: A/WORM, G. H.
CORP: PEL, Inc., Baton Rouge, LA. AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp. with Theme p 229-231 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*CONTRACT MANAGEMENT/*COST ANALYSIS/*GOVERNMENT PROCUREMENT/*RISK
MINS: / CONTRACT INCENTIVES/ DECISION MAKING/ MANAGEMENT PLANNING
ABA: GRA
ABS: This paper presents a brief description of how the results from a cost risk analysis can be used to distribute the risk in a contract between the government and the contractor. The main contract types discussed are Firm Fixed Price (FFP) and Fixed Price Incentive (FPI). Other contract types may be structured around a risk analysis but are not discussed here.

84N23323# ISSUE 13 PAGE 2054 CATEGORY 81 RPT#:
AD-P002776 83/00/00 7 PAGES UNCLASSIFIED DOCUMENT

UTTL: Award fee contract provisions as a program management tool TLSP: Final Report
AUTH: A/DEMONG, R. F.
CORP: Virginia Univ., Charlottesville. AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Federal Acquisition Res. Symp. with Theme p 168-174 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*CONTRACT INCENTIVES/*CONTRACT MANAGEMENT/*GOVERNMENT PROCUREMENT
MINS: / COST EFFECTIVENESS/ COST ESTIMATES/ MANAGEMENT PLANNING/ PRODUCTION MANAGEMENT/ PRODUCTIVITY/ STRATEGY
ABA: Author (GRA)
ABS: Award fee contract provisions can be used as a program management tool. Award fee contracts have been found to be a cost effective means of encouraging contractors,to surpass the specifications of the contract. Award fee contracting can be successfully used in the dynamic environment of R and D programs as well as full scale development programs. Award fee contracting relies on other forms of motivation than just the profit motive. The frequent evaluations used in award fee contracting give the contractor (including its managers and employees) timely feedback on its performance. These evaluations implicitly tell the contractor what the government's priorities are. This evaluation process also enables the government to better define its requirements. It serves as a motivation tool in that the managers will strive to make the evaluation look as good as possible. Timely and high level government involvement have been found to be important in the success of award fee contracting.

84N23307# ISSUE 13 PAGE 2052 CATEGORY 81 RPT#:
AD-P002760 83/00/00 5 PAGES UNCLASSIFIED DOCUMENT

UTTL: Assessing contracting workforce requirements in the matrixed organization TLSP: Final Report
AUTH: A/GOEBEL, A. J.; B/KIPP, C. W.; C/SEE, R. M.
CORP: Aeronautical Systems Div., Wright-Patterson AFB, OH. AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp. with Theme p 83-87 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*CONTRACT MANAGEMENT/*GOVERNMENT PROCUREMENT/*PERSONNEL MANAGEMENT/*WORKLOADS (PSYCHOPHYSIOLOGY)

MINS: / COMMAND AND CONTROL/ HUMAN RESOURCES/ MANAGEMENT PLANNING/ PERSONNEL MANAGEMENT/ REQUIREMENTS/ RESOURCE ALLOCATION/ SYSTEM EFFECTIVENESS
ABA: Author (GRA)
ABS: Aeronautical Systems Division (ASD), within the Deputy for Contracting and Manufacturing, on Air Force Systems Command, we believe our most critical resource to be people. Therefore, how we allocate this workforce becomes a primary ingredient to the success of our mission. The purpose of this paper is to explain how contracting personnel are managed and allocated within our matrix organization. We intend to show you how we started; our growing pains in developing a model for evaluating workload; the results of our efforts and finally, our plans for future improvements.

84N23306# ISSUE 13 PAGE 2051 CATEGORY 81 RPT#: AD-P002759 83/00/00 4 PAGES UNCLASSIFIED DOCUMENT

UTTL: Skunkworks 81 revisited: An update on acquisition strategy TLSP: Final Report
AUTH: A/LONGHOUSER, J. E.
CORP: Department of the Army, Washington, DC. AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp. with Theme p 78-81 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*CONTRACT MANAGEMENT/*GOVERNMENT PROCUREMENT/*GUNNERY TRAINING/*MANAGEMENT PLANNING/*STRATEGY/*SYSTEM EFFECTIVENESS/*TRAINING DEVICES
MINS: / MILITARY OPERATIONS/ PROCUREMENT/ RESOURCES MANAGEMENT/ SIMULATORS
ABA: Author (GRA)
ABS: A paper on competitive prototyping was presented by Mr. William Stansberry, Deputy Product Manager for Armor Training Devices, at the Interservice Industry Conference in December 1981. That paper coined the phrase Skunkworks 81, meaning a combination of the Skunkworks applied to earlier Air Force projects and competitive prototyping in full-scale development. The paper was well received and accurately reported the Conduct of Fire Trainer (COFT) development at that time. The promulgation of the well-trodden DOD Acquisition Initiatives and the much needed emphasis on streamlining the acquisition cycle provide reason for updating Skunkworks 81. The author of this update, recently assigned as Product Manager for Armor Training Devices assesses the results of the COFT application of competitive prototyping and discusses the impact this acquisition strategy has had on transition from development to production for the largest procurement of a training simulator ever negotiated.

84N23304# ISSUE 13 PAGE 2051 CATEGORY 81 RPT#: AD-P002757 83/00/00 4 PAGES UNCLASSIFIED DOCUMENT

UTTL: Assumption of risk in the R and D environment TLSP: Final Report
AUTH: A/GILL, J. H.
CORP: University of Southern California, Los Angeles. AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp. with Theme p 60-63 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*CONTRACT MANAGEMENT/*COST ESTIMATES/*GOVERNMENT PROCUREMENT/*MANAGEMENT PLANNING/*RESEARCH MANAGEMENT/*RISK/*STRATEGY
MINS: / REQUIREMENTS/ RESOURCES MANAGEMENT/ WEAPON SYSTEMS
ABA: GRA
ABS: There has been a traditional philosophy regarding the use of different types of contracts to share risk during the development of a major weapon system. This philosophy would have the Government assume the burden of risk early in the life of the system through the use of Cost Type contracts. As the requirement becomes more defined, the burden of risk is gradually transferred to the contractor with a commensurate increase in potential profit. If we accept the premise that the Acquisition system requires improvement, what are the alternatives that may be considered to alter the process? A method that has been utilized by the Ballistic Missile Office has been to dramatically alter the traditional concept of assumption of risk by offering Contractors the opportunity to take their fate into their own hands and assume a major share of the cost risk while simultaneously reducing the risk associated with technical failure.

84N23302# ISSUE 13 PAGE 2051 CATEGORY 81 RPT#: AD-P002755 83/00/00 6 PAGES UNCLASSIFIED DOCUMENT

UTTL: DECISION TECHNOLOGY: The catalyst for acquisition improvement TLSP: Final Report
AUTH: A/SWANK, R. P.; B/WALES, H. M.
CORP: Air Force Business Research Management Center, Wright-Patterson AFB, OH. AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp. with Theme p 43-48 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*DECISION MAKING/*DECISION THEORY/*GOVERNMENT PROCUREMENT/*MANAGEMENT PLANNING/*PRODUCTION MANAGEMENT/*RISK/*STRATEGY/*WEAPON SYSTEMS
MINS: / OPTIMIZATION/ QUALITY CONTROL/ SYSTEM EFFECTIVENESS/ TECHNOLOGIES
ABA: Author (GRA)
ABS: It is possible to manage all activities in a weapon

acquisition with a system that predicts and achieves desired results. DECISION TECHNOLOGY provides the Program Manager with the exact information he needs to synthesize all program elements to accurately predict performance probability without compromising management style or objectives. It embraces a basic language that simplifies understanding and communication and applies a fundamental logic that clarifies the implications of each management action. It presents the RISK and CONSEQUENCE visibility in a format that enables the Program Manager to make necessary decisions and confidently defend them knowing they will achieve the results expected. Therefore, all the weapon system expectations are precisely known at all times. DECISION TECHNOLOGY applied in over seventy applications has resulted in significant savings in cost and time along with achievement of predictable outcomes.

84N23301# ISSUE 13 PAGE 2051 CATEGORY 81 RPT#: AD-P002754 83/00/00 4 PAGES UNCLASSIFIED DOCUMENT

UTTL: Managing program risk: One way to reduce cost growth TLSP: Final Report
AUTH: A/COOPER, L.
CORP: Air Force Systems Command, Wright-Patterson AFB, OH. AVAIL.NTIS
SAP: HC A24/MF A04
In AF Business Research Management Center Proc. of the Fed. Acquisition Res. Symp. with Theme p 39-42 (SEE N84-23293 13-81)
CIO: UNITED STATES
MAJS: /*COST ANALYSIS/*COST ESTIMATES/*DECISION MAKING/* GOVERNMENT PROCUREMENT/*RISK/*STRATEGY
MINS: / BUDGETING/ MANAGEMENT PLANNING/ PRODUCTIVITY
ABA: Author (GRA)
ABS: Former Deputy Secretary of Defense, Frank C. Carlucci, in his 30 April 1981 memorandum on Improving the Acquisition Process recognized that the key to reducing program costs is to establish and maintain a stable program. One of his initiatives requires the Services to budget to most likely or expected costs, including predictable cost increases due to risk; and to provide incentives for acquisition officers and industry to make and use realistic cost estimates. This paper focuses on how the program manager can reduce cost growth through a Risk Management Program that provides a more complete assessment of program risks. The essential elements of a risk management program, a proposed approach to implementing the program, and the advantages associated with successful implementation on major weapon systems acquisitions are outlined. In summary, OSD has demonstrated a commitment to reducing cost growth. Success, however, will require the program managers to establish a risk management program that forces consideration of all program risks before they occur.

84N18304*# ISSUE 9 PAGE 1271 CATEGORY 15 RPT#: NASA-CR-173320 NAS 1.26:173320 SA-SSP-RP008-VOL-2-BK-3 CNT#: NASW-3685 83/04/20 79 PAGES UNCLASSIFIED DOCUMENT

UTTL: Space Station needs, attributes and architectural options, volume 2, book 3: Cost and programmatics TLSP: Final Technical Report
CORP: Grumman Aerospace Corp., Bethpage, NY. AVAIL.NTIS
SAP: HC A05/MF A01
CIO: UNITED STATES
MAJS: /*COST ANALYSIS/*MISSION PLANNING/*PROJECT MANAGEMENT/* SPACE STATIONS/*SPACECRAFT DESIGN
MINS: / AIRBORNE/SPACEBORNE COMPUTERS/ COST EFFECTIVENESS/ FLOW CHARTS/ SCHEDULING/ SPACE COMMERCIALIZATION/ SPACE PLATFORMS/ SPACEBORNE EXPERIMENTS
ABA: A.R.H.
ABS: The cost and programmatic considerations which integrate mission requirements and architectural options into a cohesive system for exploitation of space opportunities within affordable limits are discussed. The mission requirements, baseline architecture, a top level baseline schedule, and acquisition costs are summarized. The work breakdown structure (WBS) used to structure the program, and the WBS dictionary are included. The costing approach used, including the operation of the primary costing tool, the SPACE cost model are described. The rationale for the choice of cost estimating relationships is given and costs at the module level are shown. Detailed costs at the subsystem level are shown. The baseline schedule and annual funding profiles are provided. Alternate schedules are developed to provide different funding profiles. Alternate funding sources are discussed and foreign and contractor participation is outlined. The results of the benefit analysis are given and the accrued benefits deriving from an implemented space station program are outlined.

84N18265*# ISSUE 9 PAGE 1266 CATEGORY 15 RPT#: NASA-CR-173334 NAS 1.26:173334 D180-27477-1-VOL-1 CNT#: NASW-3680 83/04/21 69 PAGES UNCLASSIFIED DOCUMENT

UTTL: Space station needs, attributes and architectural options study. Volume 1: Executive study TLSP: Final Report
CORP: Boeing Aerospace Co., Seattle, WA. AVAIL.NTIS
SAP: HC A04/MF A01
CIO: UNITED STATES
MAJS: /*MISSION PLANNING/*SPACE STATIONS/*SPACECRAFT DESIGN
MINS: / ARCHITECTURE/ DESIGN ANALYSIS/ MANAGEMENT PLANNING/ SYSTEMS ENGINEERING/ TECHNOLOGY ASSESSMENT/ USER REQUIREMENTS
ABA: N.W.
ABS: Mission identification and validation, the benefits of a manned presence in space; attributes and architectures; time-phased mission and system requirements imposed on the

space station; orbit selection; space station architectural options; technology selection; and program planning are addressed.

84N14984# ISSUE 5 PAGE 760 CATEGORY 82 RPT#: DE84-001655 K/D-544 CONF-8310131-2 CNT#: W-7405-ENG-26 83/08/30 13 PAGES UNCLASSIFIED DOCUMENT
UTTL: Management information system for engineering
AUTH: A/GREEN, R. O.; B/MORRISON, J. M.; C/WANTLAND, R. H.
CORP: Oak Ridge Gaseous Diffusion Plant, TN. AVAIL.NTIS
SAP: HC A03/MF A01
CIO: UNITED STATES Presented at the Am. Soc. for Eng. Management Ann. Meeting, Washington, D.C., 17 Oct. 1983
MAJS: /*COMPUTER SYSTEMS DESIGN/*ENGINEERING MANAGEMENT/* MANAGEMENT INFORMATION SYSTEMS
MINS: / COMPUTER PROGRAMS/ PROJECT MANAGEMENT
ABA: DOE
ABS: The engineering management information system (EMIS) is a computer based information system that integrates business management systems. System scope includes engineering work load, forecasting, cost, schedule, and selected administrative information. The EMIS was developed to provide a single source of current, official data. It is structured to meet a wide variety of needs, such as facilitating both uniform support of project management requirements associated with the uniquely different missions of the plants and control of the day to day operations of the engineering organization.

83N28052*# ISSUE 17 PAGE 2702 CATEGORY 15 RPT#: NASA-CR-172696 NAS 1.26:172696 SSD-83-0032-1 CNT#: NASW-3683 83/04/22 4 VOLS 172 PAGES UNCLASSIFIED DOCUMENT
UTTL: Space station needs, attributes, and architectural options study. Volume 1: Missions and requirements TLSP: Final Report
CORP: Rockwell International Corp., Downey, CA. CSS: (Shuttle Integration and Satellite Systems Div.) AVAIL.NTIS
SAP: HC A08/MF A01
CIO: UNITED STATES
MAJS: /*COMMUNICATION SATELLITES/*SPACE MANUFACTURING/*SPACE STATIONS
MINS: / MISSION PLANNING/ PAYLOADS/ PROJECT MANAGEMENT/ SPACE COMMERCIALIZATION
ABA: Author
ABS: Science and applications, NOAA environmental observation, commercial resource observations, commercial space processing, commercial communications, national security, technology development, and GEO servicing are addressed. Approach to time phasing of mission requirements, system sizing summary, time-phased user mission payload support, space station facility requirements, and integrated time-phased system requirements are also addressed.

83N19731# ISSUE 10 PAGE 1461 CATEGORY 3 RPT#: PB83-110585 OTA-BP-T-14 82/08/00 52 PAGES UNCLASSIFIED DOCUMENT
UTTL: Impact of advanced air transport technology. Part 4: Financing and program alternatives for advanced high-speed aircraft
CORP: Office of Technical Services, Washington, DC. AVAIL.NTIS
SAP: HC A04/MF A01
CIO: UNITED STATES
MAJS: /*AIRCRAFT INDUSTRY/*FINANCE/*PROJECT MANAGEMENT/* TRANSPORT AIRCRAFT
MINS: / AIRCRAFT SAFETY/ ALTERNATIVES/ ECONOMIC ANALYSIS/ ENVIRONMENT EFFECTS/ EVALUATION/ RISK/ SOCIAL FACTORS
ABA: Author (GRA)
ABS: The potential financial and managerial barriers to carrying out a large scale program to create a new, long range commercial air transport employing new technology is discussed. The structure and financing practices of the conventional aircraft industry are described. A broad assessment of the economic, environmental, energy, societal, and safety aspects of technological advances that might occur in several types of transport aircraft are evaluated.

79N27005# ISSUE 17 PAGE 2345 CATEGORY 81 RPT#: AD-A068012 TAC/XPB-TN-79-5 79/04/12 50 PAGES UNCLASSIFIED DOCUMENT
UTTL: A user's guide for TAC PERT
AUTH: A/TALLEY, H. J., JR.
CORP: Tactical Air Command, Langley AFB, VA. CSS: (Concepts Div.) AVAIL.NTIS
SAP: HC A03/MF A01
CIO: UNITED STATES
MAJS: /*PERT/*PROJECT MANAGEMENT/*USER MANUALS (COMPUTER PROGRAMS)
MINS: / ALGORITHMS/ FLOW CHARTS/ MANAGEMENT METHODS
ABA: Author (GRA)
ABS: This note documents the use of the Program Evaluation and Review Technique (PERT) to assist in the close management of large programs. This note includes a general description of PERT methodology, specific conventions used in adopting this methodology to TAC'S hardware and software, a description of the output products available and a discussion of utility and requirements of this tool in program management. The results are referred to as TAC PERT.

79N25914*# ISSUE 16 PAGE 2201 CATEGORY 81 RPT#: NASA-TM-78586 A-7811 79/05/00 29 PAGES UNCLASSIFIED DOCUMENT
UTTL: Planning and managing future space facility projects --- management by objectives and group dynamics

AUTH: A/SIEBER, J. E.; B/WILHELM, J. A.; C/TANNER, T. A.; D/HELMREICH, R. L.; E/BURGENBAUCH, S. F. PAA: A/(California State Coll., Hayward); B/(Texas Univ., Austin); D/(Texas Univ., Austin); E/(Texas Univ., Austin)
CORP: National Aeronautics and Space Administration. Ames Research Center, Moffett Field, CA. AVAIL.NTIS
SAP: HC A03/MF A01
CIO: UNITED STATES
MAJS: /*GROUP DYNAMICS/*MANAGEMENT PLANNING/*MISSION PLANNING/*PROBLEM SOLVING/*PROJECT MANAGEMENT/*SPACE MISSIONS
MINS: / COMMUNICATING/ EMOTIONAL FACTORS/ EMPLOYEE RELATIONS/ ORGANIZING/ SPACELAB
ABA: A.R.H.
ABS: To learn how ground-based personnel of a space project plan and organize their work and how such planning and organizing relate to work outcomes, longitudinal study of the management and execution of the Space Lab Mission Development Test 3 (SMD 3) was performed at NASA Ames Research Center. A view of the problems likely to arise in organizations and some methods of coping with these problems are presented as well as the conclusions and recommendations that pertain strictly to SMD 3 management. Emphasis is placed on the broader context of future space facility projects and additional problems that may be anticipated. A model of management that may be used to facilitate problem solving and communication - management by objectives (MBO) is presented. Some problems of communication and emotion management that MBO does not address directly are considered. Models for promoting mature, constructive and satisfying emotional relationships among group members are discussed.

74N32401*# ISSUE 21 PAGE 2630 CATEGORY 34 RPT#: NASA-CR-129029 CNT#: NGT-01-002-080 74/06/01 76 PAGES UNCLASSIFIED DOCUMENT
UTTL: The Saturn management concept
AUTH: A/BILSTEIN, R. E.
CORP: Alabama Univ., Huntsville. AVAIL.NTIS
SAP: HC $4.00
CIO: UNITED STATES
MAJS: /*MANAGEMENT METHODS/*PROJECT MANAGEMENT/*SATURN LAUNCH VEHICLES
MINS: / MANAGEMENT PLANNING/ NASA PROGRAMS/ SYSTEMS MANAGEMENT
ABA: Author
ABS: Management of the Saturn launch vehicles was an evolutionary process, requiring constant interaction between NASA Headquarters, the Marshall Space Flight Center (particularly the Saturn 5 Program Office), and the various prime contractors. Successful Saturn management was a blend of the decades of experience of the von Braun team, management concepts from the Army, Navy, Air Force, and Government, and private industry. The Saturn 5 Program Office shared a unique relationship with the Apollo Program Office at NASA Headquarters. Much of the success of the Saturn 5 Program Office was based on its painstaking attention to detail, emphasis on individual responsibilities (backed up by comprehensive program element plans and management matrices), and a high degree of visibility as embodied in the Program Control Center.

73N31916# ISSUE 22 PAGE 2737 CATEGORY 34 73/00/00 119 PAGES UNCLASSIFIED DOCUMENT
UTTL: GAO report on analysis of cost of space shuttle program
UNOC: Congressional hearings on cost of space shuttle program to show differences between Government Accounting Office and NASA projections
CORP: Committee on Science and Astronautics (U.S. House).
SAP: Avail: Subcomm. on Manned Space Flight
CIO: UNITED STATESGPO Washington Hearings, with Committee's summary and conclusions, before Comm. on Sci. and Astron., 93d Congr., 1st Sess., No. 5, 26 Jun. 1973
MAJS: /*CONGRESSIONAL REPORTS/*COST ANALYSIS/*FINANCIAL MANAGEMENT/*MISSION PLANNING/*NASA PROGRAMS/*SPACE SHUTTLES
MINS: / COST ANALYSIS/ FEDERAL BUDGETS/ PAYLOADS/ SPACECRAFT CONFIGURATIONS
ABA: Author
ABS: A Congressional hearing on the cost of the space shuttle program is presented. The findings of the Government Accounting Office are compared with the projected NASA programs to determine areas of agreement and disagreement. The information is presented in the form of testimony by knowledgeable witnesses. Statements of the witnesses are substantiated by tabilated data and bar graphs. The appendix contains a chapter by chapter refutation by NASA of the Government Accounting Office claims where discrepancies exist.

73N30214*# ISSUE 21 PAGE 2521 CATEGORY 11 RPT#: NASA-CR-133828 CNT#: NSR-09-046-001 73/01/31 92 PAGES UNCLASSIFIED DOCUMENT
UTTL: The administration of the NASA space tracking system and the NASA space tracking system in Australia
UNOC: Administration, development, and maintenance of NASA tracking network with emphasis on Australia
AUTH: A/HOLLANDER, N.
CORP: National Academy of Public Administration, Washington, DC. AVAIL.NTIS
SAP: HC $6.75
CIO: UNITED STATES
MAJS: /*AUSTRALIA/*INTERNATIONAL COOPERATION/*NASA PROGRAMS/*TRACKING NETWORKS
MINS: / ECONOMY/ NASA SPACE PROGRAMS/ OPERATIONS RESEARCH/ PERSONNEL MANAGEMENT
ABA: F.O.S.
ABS: The international activities of the NASA space program were studied with emphasis on the development and maintenance of tracking stations in Australia. The history

and administration of the tracking organization and the manning policies for the stations are discussed, and factors affecting station operation are appraised. A field study of the Australian tracking network is included.

73N24981 ISSUE 15 PAGE 1848 CATEGORY 34 73/01/00
10 PAGES UNCLASSIFIED DOCUMENT
UTTL: Why project control?
UNOC: Project control at ESTEC, noting network analysis, phased project planning, cost control, and contract management
AUTH: A/GEHRIGER, H.
CORP: European Space Agency. European Space Research and Technology Center, ESTEC, Noordwijk (Netherlands).
In ESRO Proj. Management and Proj. Control p 215-224
(SEE N73-24962 15-34)
CIO: NETHERLANDS
MAJS: /*COMMAND AND CONTROL/*MANAGEMENT SYSTEMS/*PROJECT PLANNING
MINS: / CONTRACT MANAGEMENT/ COST ESTIMATES/ NETWORK ANALYSIS/ PROJECT MANAGEMENT
ABA: Author (ESRO)
ABS: Project control is focussed on two very important management control parameters: time and cost. It must encompass all project phases, from conception of a system to its acquisition and start of operations. Plans covering all project phases ahead are developed very early and are progressively detailed and refined as the system to be acquired passes through and evolves from the various project phases. At the end of each phase, detailed and accepted control plans, such as project networks, manpower budgets and cost estimates, are available which can be used to monitor the evolution of the project elements, to detect unfavorable trends early and to warn management such that corrective action can be taken in good time and with a high chance of success. Project control wants to ensure that the project initiator gets value for money. The specific techniques and methods used to achieve this goal are explained in detail. A review is given of the total project control system in operation at ESTEC, as well as a description of how the individual techniques of project network analysis, phased project planning, work package cost control and contracts management have been integrated into a self-contained operational entity and successfully applied to several projects.

73N24978* ISSUE 15 PAGE 1848 CATEGORY 34 73/01/00
11 PAGES UNCLASSIFIED DOCUMENT
UTTL: Phased project planning and development in anticipation of operational programs
UNOC: Phased project planning and development for operational space missions referring to NASA meteorological and communication satellite programs
AUTH: A/STROUD, W. G.
CORP: National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, MD.
In ESRO Proj. Management and Proj. Control p 177-187
(SEE N73-24962 15-34)
CIO: UNITED STATES
MAJS: /*COMMUNICATION SATELLITES/*GOVERNMENT/INDUSTRY RELATIONS /*METEOROLOGICAL SATELLITES/*NASA PROGRAMS/*PROJECT PLANNING
MINS: / MISSION PLANNING/ PHASES/ PROJECT MANAGEMENT/ RESEARCH AND DEVELOPMENT/ SEQUENCING/ SPACE MISSIONS
ABA: ESRO
ABS: The impact of future operational status on the planning and execution of the research and development activities for major space flight projects is assessed. These projects, within NASA, are part of the Applications Program involving communications and meteorology. The NASA management approach to these projects is determined by national policies governing the responsibilities and relationships among the various government agencies and private industries.

73N24977 ISSUE 15 PAGE 1848 CATEGORY 34 73/01/00
4 PAGES UNCLASSIFIED DOCUMENT
UTTL: Why plan and manage in phases?
UNOC: Phased planning and management
AUTH: A/LAGARDE, J. B.
CORP: European Space Agency. European Space Research and Technology Center, ESTEC, Noordwijk (Netherlands). CSS: (Systems Studies Div.)
In ESRO Proj. Management and Proj. Control p 173-176
(SEE N73-24962 15-34)
CIO: NETHERLANDS
MAJS: /*PROJECT MANAGEMENT/*PROJECT PLANNING
MINS: / PHASES/ SEQUENCING/ TASKS
ABA: ESRO
ABS: Definitions of the meaning of plan, manage and phases are given. The reasons are then analyzed why an overall task is divided in subtasks or phases, and the drawbacks of this partitioning concept are emphasized.

73N24962# ISSUE 15 PAGE 1846 CATEGORY 34 RPT#: ESRO-SP-90 72/01/00 428 PAGES Partly in ENGLISH and partly in FRENCH UNCLASSIFIED DOCUMENT
UTTL: Project management and project control
UNOC: Conference on project management and project control
CORP: European Space Agency, Paris (France). AVAIL.NTIS
SAP: HC $23.50
CIO: FRANCE Proc. of the 10th ESRO Summer School, Frascati, Italy, Sep. 1972
MAJS: /*CONFERENCES/*CONTRACT MANAGEMENT/*EUROPEAN SPACE PROGRAMS/*MANAGEMENT SYSTEMS/*PROJECT MANAGEMENT/*PROJECT PLANNING/*SYSTEMS ENGINEERING
MINS: / GOVERNMENT/INDUSTRY RELATIONS/ INTERNATIONAL COOPERATION / MANAGEMENT METHODS
ANN: To encourage and promote the further advancement of the

state of the art in systematic project management a forum for the exchange of the relevant knowledge and experience was provided. The sessions cover the following topics: introduction to project management and project control; project management; systems engineering; phased project management; project planning and control; contract management; and future trends in project management.

73N19958*# ISSUE 10 PAGE 1225 CATEGORY 34 RPT#: NASA-CR-131087 CNT#: NSR-09-046-001 72/08/00 71 PAGES UNCLASSIFIED DOCUMENT

UTTL: NASA Seminar on Organization and Management
UNOC: Proceedings of seminar on organization of NASA to show areas of responsibility, resource allocation, and program management
AUTH: A/CRAWLEY, R. W.; B/KLOMAN, E. H.
CORP: National Academy of Public Administration, Washington, DC. AVAIL.NTIS
SAP: HC $5.75
CIO: UNITED STATES
MAJS: /*DECISION MAKING/*MANAGEMENT METHODS/*MANAGEMENT PLANNING /*NASA PROGRAMS
MINS: / ORGANIZING/ PERSONNEL MANAGEMENT/ PROJECT MANAGEMENT
ABA: Author
ABS: The proceedings of a seminar series of current problems and organization of NASA are presented. The seminar was designed to provide a comparative basis for understanding such recurring problems as delegation of authority, resource allocation and decision making patterns, headquarters organization, systems of program control and evaluation, roles and relations of scientists, engineers, and administrators, headquarters-field center relationships, and the overall management philosophy of the headquarters and field centers.

72N32954*# ISSUE 23 PAGE 3157 CATEGORY 34 RPT#: NASA-CR-126941 REPT-6223-R CNT#: NGL-33-022-090 72/01/00 173 PAGES UNCLASSIFIED DOCUMENT

UTTL: Project management in the Apollo program: An interdisciplinary study
UNOC: Interdisciplinary study of project management in Apollo program TLSP: Final Report
AUTH: A/DRUCKER, E. E.; B/POOLER, W. S.; C/WILEMON, D. L.; D/WOOD, B. D.
CORP: Syracuse Univ., NY. AVAIL.NTIS
SAP: HC $10.75
CIO: UNITED STATES
MAJS: /*APOLLO PROJECT/*PROJECT MANAGEMENT
MINS: / CONTRACTORS/ GOVERNMENT/INDUSTRY RELATIONS/ MANAGEMENT PLANNING/ TRADEOFFS
ABA: F.O.S.
ABS: Findings concerning project management in the NASA Apollo program are presented. The Apollo program in the context of the total NASA organization is examined along with the nature of project management and the manner in which project managers functioned in the Apollo program. The utilization of the in-house technical competence in the support of the Apollo program, and the formal and informal relationships between Apollo managers and the contractors are discussed.

72N28878*# ISSUE 19 PAGE 2619 CATEGORY 31 RPT#: NASA-TM-X-58090 MSC-06750 72/06/00 61 PAGES UNCLASSIFIED DOCUMENT

UTTL: The management approach to the NASA space station definition studies at the Manned Spacecraft Center
UNOC: Management organizational concepts and techniques for designing space stations
AUTH: A/HEBERLIG, J. C.
CORP: National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, TX. AVAIL.NTIS
SAP: HC $5.25
CIO: UNITED STATES
MAJS: /*NASA PROGRAMS/*PROJECT MANAGEMENT/*SPACE STATIONS/* SYSTEMS ENGINEERING
MINS: / MANAGEMENT PLANNING/ PERSONNEL SUBSYSTEMS/ TECHNOLOGY UTILIZATION
ABA: Author
ABS: The overall management approach to the NASA Phase B definition studies for space stations, which were initiated in September 1969 and completed in July 1972, is reviewed with particular emphasis placed on the management approach used by the Manned Spacecraft Center. The internal working organizations of the Manned Spacecraft Center and its prime contractor, North American Rockwell, are delineated along with the interfacing techniques used for the joint Government and industry study. Working interfaces with other NASA centers, industry, and Government agencies are briefly highlighted. The controlling documentation for the study (such as guidelines and constraints, bibliography, and key personnel) is reviewed. The historical background and content of the experiment program prepared for use in this Phase B study are outlined and management concepts that may be considered for future programs are proposed.

A

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ALS - A unique system approach
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AEROSPACE ENGINEERING
ALS - A unique system approach
AIAA PAPER 90-2703 A90-42817
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National Aero-Space Plane technology development overview
AIAA PAPER 89-5003 A89-51328
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Space stations of the imagination A83-31050
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NASA-TM-102990 N90-71002
AIR BREATHING ENGINES
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AIR TRAFFIC CONTROLLERS (PERSONNEL)
Aviation safety: Conditions within the air traffic control work force. Fact sheet for congressional requesters
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AIRCRAFT DESIGN
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The NASA scheduling system: Scheduling in project management, part 2
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A study of space station needs, attributes and architectural options, volume 2, technical. Book 3: Economic benefits, costs and programmatics
NASA-CR-173689 N84-27807
Space station needs, attributes and architectural options. Volume 4, task 2 and 3: Mission implementation and cost
NASA-CR-173715 N84-27813
Space station needs, attributes and architectural options: Study summary
NASA-CR-173692 N84-27814
ARMED FORCES (UNITED STATES)
Hardware versus manpower compatibility methodology. Volume 1: Overview and manager's guide
AD-A225122 N91-12208
AUSTRALIA
The administration of the NASA space tracking system and the NASA space tracking system in Australia
NASA-CR-133828 N73-30214

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NASA-CR-172696 N83-28052
COMPATIBILITY
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AD-A225122 N91-12208
COMPUTER PROGRAMMING
Systems engineering management guide
AD-A223168 N90-27544
Manager's handbook for software development, revision 1
NASA-TM-103417 N91-15773
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Manager's handbook for software development, revision 1
NASA-TM-103417 N91-15773
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CONFERENCES
Project management and project control
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Automated configuration management on a DOD satellite ground system A87-24674
Space Station Freedom - Configuration management approach to supporting concurrent engineering and total quality management --- for NASA Space Station Freedom Program A91-10908
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Making spacecraft affordable - An assessment of alternatives
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Space Station needs, attributes and architectural options, volume 2, book 3: Cost and programmatics
NASA-CR-173320 N84-18304
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COST REDUCTION
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Improving facility effectiveness to reduce testing cost
AIAA PAPER 91-0656 A91-19399
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DECISION TECHNOLOGY: The catalyst for acquisition improvement
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AD-P002755 N84-23302
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Space station needs, attributes and architectural options. Volume 4, task 2 and 3: Mission implementation and cost
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DOCUMENTATION
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Launch vouchers for space science research --- Book A89-33775
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ALS - A unique system approach
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Program Management System manual
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